GeoVision inc
The Vision of Security

GV-Fisheye IP Camera H.264

GV-FE110/GV-FE420/GV-FE520 User's Manual

Before attempting to connect or operate this product,
please read these instructions carefully and save this manual for future use.

FE110420520TIV109-A

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Preface

Welcome to the *GV-Fisheye IP Camera User's Manual*.

The GV-Fisheye IP Camera has three models with different resolutions. This Manual is designed for the following models and firmware versions:

Model	Model Number	Firmware Version
Fisheye Camera	GV-FE110	V1.08
	GV-FE420	V1.09
	GV-FE520	V1.09

Contents

Naming and Definition vi

Note for Recording vii

Chapter 1 Introduction 1

1.1 Key Features 1
1.2 Packing List 3
1.3 System Requirement 4
1.4 Optional Accessories 6
1.5 Physical Description 7
1.6 Installation 9
1.6.1 Hard Ceiling Mount 10
1.6.2 In-Ceiling Mount 11
1.6.3 Standard Wall Mount and Ground Mount 13
1.7 Optional Installation 14
1.7.1 Tilting Wall Mount 14
1.7.2 Wall Pendant Mount 19
1.8 Connecting the Data Cable 22

Chapter 2 Getting Started 24

2.1 Installing on a Network 24
2.1.1 Checking the Dynamic IP Address 25
2.1.2 Assigning an IP Address 27
2.2 Configuration Basics 28

Chapter 3 Accessing the Camera 29

3.1 Accessing Your Surveillance Images 29
3.2 Functions Featured on the Main Page 30
3.2.1 The Live View Window 31
3.2.2 Fisheye View 33
3.2.3 The Control Panel of the Live View Window 37
3.2.4 Snapshot of a Live Video 41
3.2.5 Video Recording 41
3.2.6 Wide Angle Lens Dewarping 42
3.2.7 Picture-in-Picture and Picture-and-Picture View 43

3.2.8 Object Tracking 45
3.2.9 Alarm Notification 47
3.2.10 Video and Audio Configuration 48
3.2.11 Remote Configuration 48
3.2.12 Camera Name Display 49
3.2.13 Image Enhancement 49
3.2.14 I/O Control 50
3.2.15 Visual Automation 51
3.2.16 Network Status 51

Chapter 4 Administrator Mode 52

4.1 Video & Motion 54
4.1.1 Video Settings 54
4.1.2 Motion Detection 58
4.1.3 Privacy Mask 60
4.1.4 Text Overlay 61
4.1.5 Tampering Alarm 62
4.1.6 Visual Automation 64
4.2 I/O Control 65
4.2.1 Input Settings 65
4.2.2 Output Settings 66
4.3 Events & Alerts 67
4.3.1 E-mail 67
4.3.2 FTP 69
4.3.3 Center V2 71
4.3.4 VSM 73
4.3.5 Backup Center 75
4.3.6 Video Gateway / Recording Server 77
4.3.7 ViewLog Server 79
4.3.8 RTSP 80
4.4 Monitoring 81
4.5 Recording Schedule 82
4.5.1 Recording Schedule Settings 82
4.5.2 I/O Monitoring Settings 83
4.6 Remote ViewLog 84
4.7 Network 85
4.7.1 LAN 85
4.7.2 Advanced TCP/IP 87

4.7.3 IP Filtering 90
4.7.4 SNMP Setting 91
4.8 Management 92
4.8.1 Date and Time Settings 92
4.8.2 GPS Maps Settings 94
4.8.3 Storage Settings 96
4.8.4 User Account 98
4.8.5 Log Information 99
4.8.6 System Log 100
4.8.7 Tools 101

Chapter 5 Recording and Playback 103

5.1 Recording 103
5.2 Playback 103
5.2.1 Playback Using the Memory Card 104
5.2.2 Playback over Network 105
5.2.3 Access to the Recorded Files through FTP Server 106
5.2.4 Playback of Daylight Saving Time Events 107

Chapter 6 Advanced Applications 108

6.1 Upgrading System Firmware 108
6.1.1 Using the Web Interface 109
6.1.2 Using the IP Device Utility 110
6.2 Backing Up and Restoring Settings 112
6.2.1 Backing Up the Settings 112
6.2.2 Restoring the Settings 113
6.3 Restoring to Factory Default Settings 114
6.4 Verifying Watermark 115
6.4.1 Accessing AVI Files 115
6.4.2 Running Watermark Proof 115
6.4.3 The Watermark Proof Window 116

Chapter 7 DVR Configurations 117
7.1 Setting Up IP Cameras 119
7.1.1 Customizing the Basic Settings 122
7.2 Remote Monitoring with Multi View 123
7.2.1 Connecting to the IP Camera 123
7.3 Remote Monitoring with E-Map 124
7.3.1 Creating an E-Map for the IP Camera 124
7.3.2 Connecting to the IP Camera 125

Chapter 8 CMS Configurations 126
8.1 Center V2 126
8.2 VSM 129
8.3 Dispatch Server 130

Specifications 131
Camera 131
Optics Lens 131
Operation 132
Network 133
Mechanical 133
General 134
Power over Ethernet 134
Web Interface 135
Application 135

Appendix 136
A. Settings for Internet Explore 8 136
B. RTSP Protocol Support 137
C. The CGI Command 137
D. Supported Firmware for Flash Memory 138

Naming and Definition

GV-System	GeoVision Analog and Digital Video Recording Software. The GV-System also refers to **Multicam System**, **GV-NVR System**, **GV-Hybrid DVR System** and **GV-DVR System** at the same time.

Note for Recording

The GV-Fisheye IP camera is designed to work with GV-System, a hybrid or digital video management system. Normally, the images are recorded to the memory card inserted in the camera. Once the camera is connected to GV-System for video management or its Live View (Figure 3-3) is accessed through the Web browser, recording to the memory card will be stopped and GV-System will take over the recording. When the connection between the camera and GV-System is interrupted, the recording to the memory card will be resumed to back up the images on the camera.

Chapter 1 Introduction

The GV-FE110/GV-FE420/GV-FE520 is a fisheye camera that allows you to monitor all angles of a location using just one camera. The distorted hemispherical image of the fisheye camera will be converted into the conventional rectilinear projection.

Without installing any software, you can watch live view and utilize functions such as motion detection, privacy mask, and alert notification through the Web interface using an IE browser. In addition, the GV-Fisheye IP Camera seamlessly integrates with the GV-System, providing advanced monitoring and video management features.

1.1 Key Features

- 1.3 MP / 4 MP / 5 MP progressive scan CMOS for GV-FE110/GV-FE420/GV-FE520
- H.264, MPEG4 and MJPEG video compression for GV-FE110 and H.264 and MJPEG video compression for GV-FE420/GV-FE520
- Electronic day and night function (except GV-FE110)
- Provides 360° and 180° panorama view
- No mechanical moving parts
- Micro SD/SDHC Card Slot
- Virtual PTZ function
- Auto Pan function
- Object tracking
- Built-in Web server for monitoring through IE browser
- Different angle of view controllable by multiple users at the same time
- Up to 15 fps at 1280 x 1024 for GV-FE110, 15 fps at 2048 x 1944 for GV-FE420 and 10 fps at 2560 x 1920 for GV-FE520
- Built-in microphone and speaker
- One sensor input and alarm output
- DC 12V / AC 24V / PoE
- Playback from any view angle and zoom level
- Privacy mask to cover parts of the image that should not be viewable

- Visual automation
- Tampering alarm
- Text overlay
- 28 languages on web interface

1.2 Packing List

- Camera Body

- Support Bracket x 3

- Camera Cover (Hard Ceiling Mount)

- Camera Cover (In-Ceiling Mount)

- Screw (Hard Ceiling Mount) x 3

- Screw (In-Ceiling Mount) x 3

- Torx Wrench

- Plastic Screw Anchor x 3

- 3-Pin Terminal Block
- GV-Fisheye IP Camera Software DVD
- GV-NVR Software DVD
- DC 12V Power Adapter
- Installation Sticker
- GV-NVR Quick Start Guide

1.3 System Requirement

To operate the camera through a web browser, make sure your PC has good network connection, and meet the following system requirement:

GV-FE110

OS	32-bit	Windows XP / Vista / 7 / Server 2008
	64-bit	Windows 7 / Server 2008
GV-System Version		GV-System V8.4.0.0 with patch files or later
Browser		Internet Explorer 7.x or later

GV-FE420

OS	32-bit	Windows XP / Vista / 7 / Server 2008
	64-bit	Windows 7 / Server 2008
GV-System Version		GV-System V8.4.0.0 with patch files or later
Browser		• Internet Explorer 7.x or later • Firefox • Google Chrome • Safari

Note: For GV-FE420, 32-bit operating system is only supported in V8.5.0.0 or later.

GV-FE520

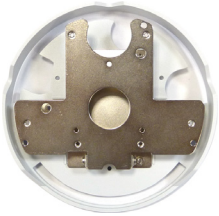
OS	32-bit	Windows XP / Vista / 7 / Server 2008
	64-bit	Windows 7 / Server 2008
GV-System Version		GV-System V8.5.0.0 or later
Browser		• Internet Explorer 7.x or later • Firefox • Google Chrome • Safari

Note:

1. If you are using Microsoft Internet Explorer 8.0, additional settings are required. Please refer to *Settings for Internet Explorer 8* in Appendix A.
2. When using non-IE browsers,
   a. The following functions are not supported: Motion Detection, Tampering Alarm, Visual Automation, Text Overlay, Two-Way Audio, and GPS map settings. To see the functions available on live view windows using non-IE browsers, see *Figure 3-4*.
   b. RTSP streaming must be enabled. By default, RTSP streaming is enabled. See *4.3.8 RTSP* to see more details on RTSP settings.

1.4 Optional Accessories

Optional devices can expand your camera's capabilities and versatility. Contact your dealer for more information.

Model Number	Name	Details
GV-Mount904	Tilting Wall Mount Bracket 	**Dimension:** ø 159.1 x 40.5 mm / ø 6.3 x 1.6 in **Tilt angle:** 0-20 ° **Weight:** 400 g / 0.88 lb
GV-Mount903	GV-FE Series Dome Housing	**Dimensions:** ø 185.51 x 150.35 mm / 7.3 x 5.9 in **Weight:** 700 g / 1.54 lb
GV-Mount200	Wall Pendant Tube	**Dimensions (L x W x D):** 225 x 140 x 250 mm / 8.9 x 5.5 x 9.8 in **Weight:** 900 g / 1.98 lb
GV-Mount201	Wall Pendant Tube	**Dimensions (L x W x D):** 197.67 x 109 x 274.25 mm / 7.8 x 4.3 x 10.8 in **Weight:** 600 g / 1.32 lb
GV-Mount202	Wall Pendant Tube	**Dimensions (L x W x D):** 193.08 x 98 x 310.5 mm / 7.6 x 3.9 x 12.2 in **Weight:** 600 g / 1.32 lb
GV-PA191	Power over Ethernet (PoE) Adapter	The GV-PA191 is a Power over Ethernet (PoE) adapter designed to provide power to the IP device through a single Ethernet cable.

1.5 Physical Description

To access the Default button, LED indicators, and micro SD card slot, unscrew the three screws indicated below and then remove the outer shell of the camera.

Figure 1-1

You can now access the Default button, LED indicators, and the micro SD card slot.

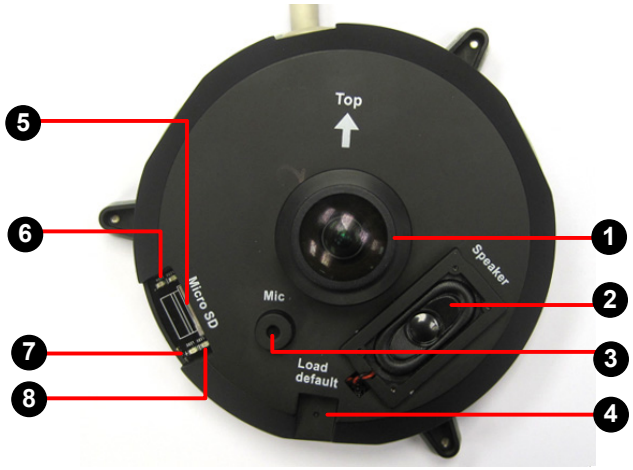


Figure 1-2

No.	Name	Function
1	Lens	Rotates the lens to adjust focus.
2	Speaker	Talks to the surveillance area from the local computer.
3	Microphone	Receives the sound from the camera.
4	Default Button	Resets all configurations to default factory settings. See *6.3 Restoring to Factory Default Settings*.
5	Micro SD Card Slot	Inserts a micro SD/SDHC memory card to store recorded data.
6	Network status LED	Indicates the network status.
7	Power status LED	Indicates whether the camera is powered on or off.
8	System status LED	Indicates whether the system is booted successfully or not.

1.6 Installation

The GV-FE110/GV-FE420/GV-FE520 is designed to be mounted on the ceiling, wall or ground. There are two ways to mount the camera on the ceiling, **Hard Ceiling Mount** and **In-Ceiling Mount**. Make sure the ceiling has enough strength to support the fisheye camera.

Hard Ceiling Mount

In-Ceiling Mount

Wall Mount

Ground Mount

Figure 1-3

Note: GV-FE110 / GV-FE420 / GV-FE520 is designed for indoor use only.

1.6.1 Hard Ceiling Mount

1. Place the installation sticker on the ceiling board. The 3 red dots indicate the location of the screws.

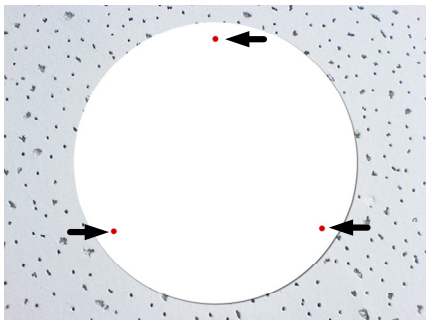


Figure 1-4

2. At the 3 red dots, drill a hole slightly smaller than the plastic screw anchors provided.
3. Insert the 3 plastic screw anchors in the drilled holes.
4. Secure the fisheye camera with the 3 hard ceiling mount screws provided.

Figure 1-5

5. Place the camera cover for hard ceiling mount on top of the camera and tighten the screws with the torx wrench provided.

Figure 1-6

1.6.2 In-Ceiling Mount

In-Ceiling Mount allows the camera to be mounted into the ceiling, revealing a small portion of the camera. In-Ceiling Mount requires the ceiling board to be between 0.5 – 3.0 cm (0.2 – 1.18 in) thick.

1. Place the installation sticker on the ceiling board, and cut the circle part out of the ceiling.

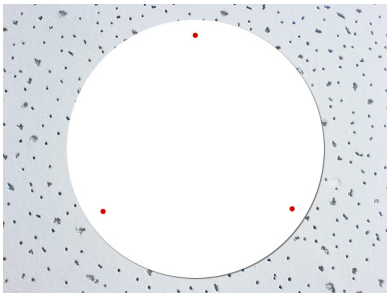


Figure 1-7

2. Align the 3 support brackets with the holes on the back of the camera as shown below and secure using the in-ceiling mount screws provided.

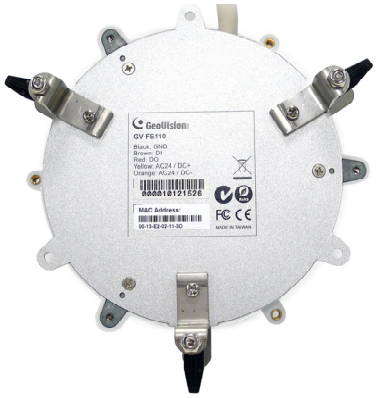


Figure 1-8

3. Place the fisheye camera into the ceiling opening as shown below.

Figure 1-9

4. On the back side, make sure the black plastic clips are slightly above the ceiling board and pointing outward.

Figure 1-10

5. From the front side of the camera, tighten the screws.

Figure 1-11

6. Place the camera cover for in-ceiling mount on top of the camera and tighten the 3 screws.

Figure 1-12

1.6.3 Standard Wall Mount and Ground Mount

To mount the camera on a wall, follow the instructions in *Hard Ceiling Mount*. For ground mount, simply place the camera on a flat surface such as a conference table.

Hint: Mount the fisheye camera in the middle of the wall to have an excellent overview. Or ensure the camera is focused on the most important areas of the room as directly as possible to have the desired detailed recognition.

1.7 Optional Installation

Optional mounting kits can be purchased to support tilting wall mount and wall pendant mount.

Tilting Wall Mount Wall Pendant Mount

Figure 1-13

1.7.1 Tilting Wall Mount

You can install the camera on wall with an adjustable back cover which allows you to adjust its angle after installation.

Front View **Side View: Flat** **Side View: Tilted**

Figure 1-14

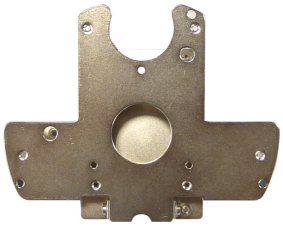
The tilting wall mount requires the optional GV-Mount904 tilting wall mount bracket.

GV-Mount904

- Back Cover x 1

- Back Plate x 1

- Tilting Rack x 1



- Long Screw x 3

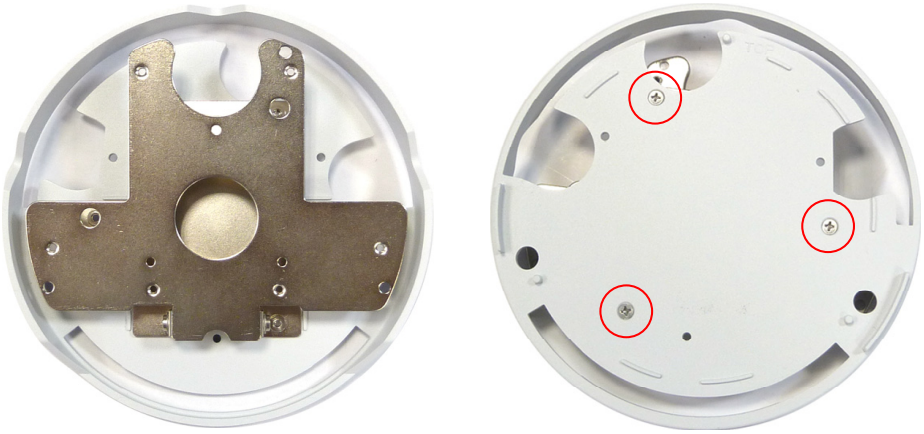
- Short Screw x 9

- Installation Sticker

1. Unscrew the inner housing cover using the supplied torx wrench.

Figure 1-15

2. Assemble the tilting rack with the back plate and secure them together with 3 short screws from the back.



Front View **Back View**

Figure 1-16

3. Thread the camera cable into an opening on the back plate and align the top side of the camera with the top of the back plate.

Tip: Pull the tilting rack to a wider angle for easier threading.

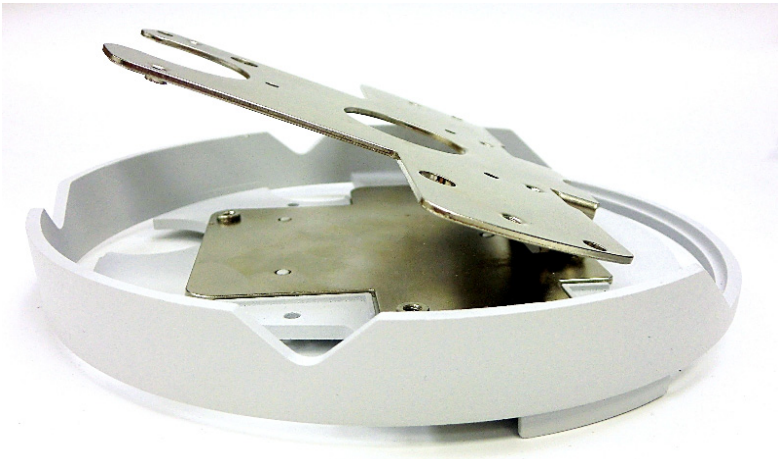


Figure 1-17

Figure 1-18

4. Secure the camera from the back with 3 long screws.

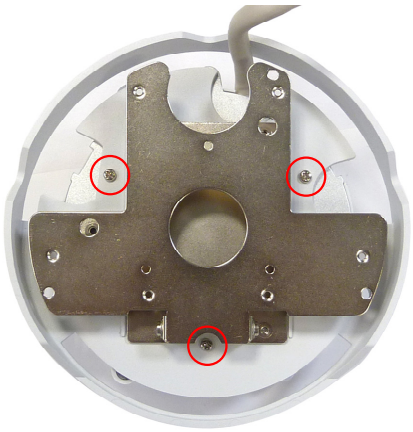


Figure 1-19

5. Put on the back cover and secure it with 6 small screws.

Figure 1-20

6. To accommodate the adjustment, reserve some length of cable by making a curve in-between the back plate and the back cover.

Figure 1-21

7. Paste the supplied sticker on the wall. The 3 red dots indicate the screw position.

Important: Be sure that the “TOP” arrow on the sticker points toward the ceiling.

8. Drill the 3 red dots and insert the plastic screw anchor.
9. Secure the camera to wall using 3 screws.

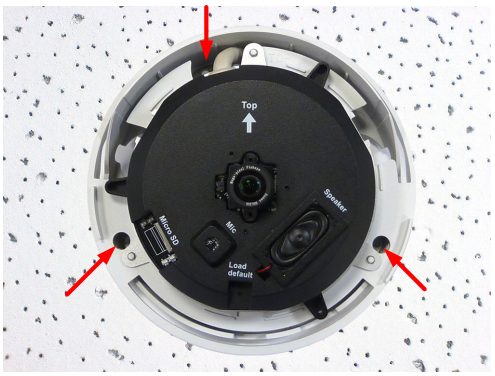


Figure 1-22

10. Insert a micro SD card to the camera.
11. Secure the inner housing cover using the torx wrench.
12. Secure the camera cover (hard-ceiling mount) using the torx wrench.

Figure 1-23

1.7.2 Wall Pendant Mount

Using the optional wall pendant mount kit, a wall pendant tube can be installed on the wall with the camera pointing downward.

Figure 1-24

The wall pendant mount requires the GV-FE Series Dome Housing (GV-Mount903) and one of the three wall pendant tubes (GV-Mount200 / 201 / 202) below.

GV-Mount903

Dome Housing

- M4 hex screws x 4

(only three M4 hex screws are required)

- M6 hex screws x 6

GV-Mount200

GV-Mount201

GV-Mount202

1. Thread the camera cable through the hole on the bottom of the dome housing.
2. Align the three holes on the camera body with the three protruding pillars in the dome housing.

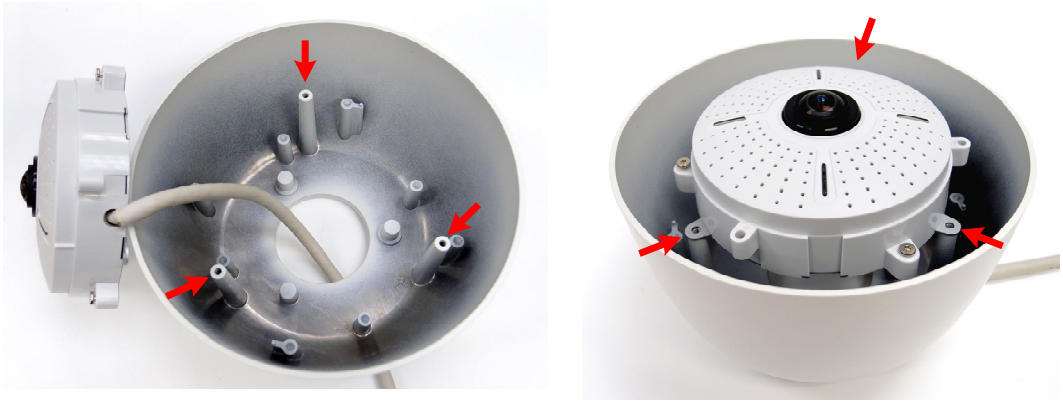


Figure 1-25

3. Secure with the three supplied M4 hex screws.
4. Place the camera cover for in-ceiling mount on the camera body and secure the 3 screws with the supplied torx wrench.

Figure 1-26

5. Thread the cable through the housing cap and secure with three supplied M6 hex screws.

Tip: The hole on the housing cap that is flat should be matched with the hole on the housing cover without an indent.

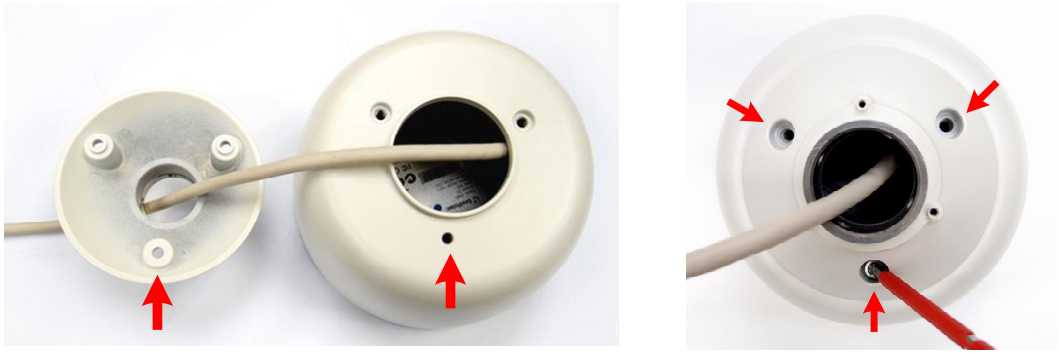


Figure 1-27

6. Insert the housing cap into the wall pendant tube and secure with the three supplied M6 hex screws.

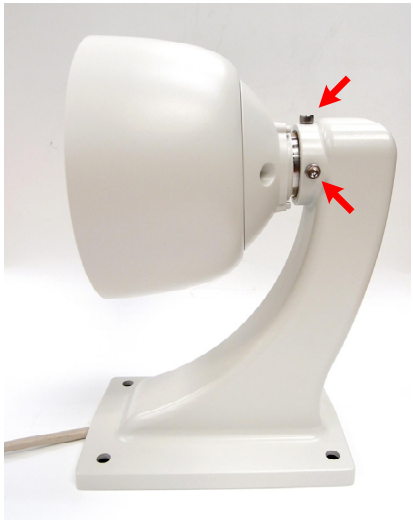


Figure 1-28

7. Place the wall pendant tube on the wall and secure with four screws of your choice.

Figure 1-29

1.8 Connecting the Data Cable

The fisheye camera comes with a 5-pin data cable that allows you to connect to the power and any I/O devices.

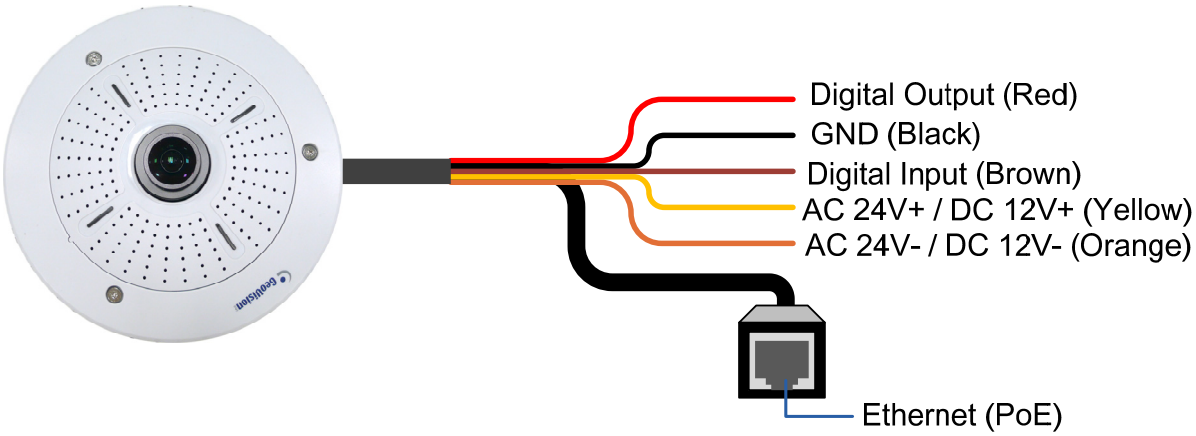


Figure 1-30

Wire Definition

No.	Wire Color	Definition
1	Yellow	AC 24V+ / DC 12V+
2	Orange	AC 24V- / DC 12V-
3	Brown	Digital Input
4	Red	Digital Output
5	Black	GND

Connecting to Power

You can connect to power using either the power adapter provided or a Power over Ethernet (PoE) adapter. See “Power over Ethernet” in Specifications later in this manual before purchasing a PoE adapter. To connect to power using the power adapter, follow the steps below to connect the orange and yellow wires of the camera to the 3-pin terminal block provided.

1. Insert the yellow wire to the pin on the right-side of the terminal block and the orange wire to the pin on the left-side of the terminal block.
2. Use a small flat-tip screwdriver to secure the screws above the pins.

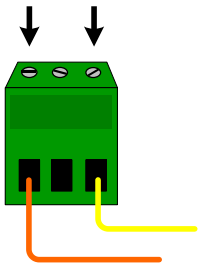


Figure 1-31

3. Connect the DC 12V Power Adapter to the 3-Pin Terminal Block.

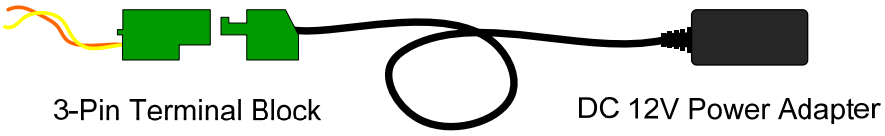


Figure 1-32

Note: A DC 12V power adapter has been provided, but both AC 24V power adapter and DC 12V power adapter are compatible.

Chapter 2 Getting Started

This section provides basic information to get the camera working on the network.

2.1 Installing on a Network

These instructions describe the basic connections to install the camera on the network.

1. Using a standard network cable, connect the camera to your network.
2. Connect power using one of the methods:
   - Using the supplied power adapter, connect to power. For details, see *1.7 Connecting the Data Cable*.
   - Use the Power over Ethernet (PoE) function. The power will be provided over the network cable.
3. You can now access the Web interface of the camera.
   - For GV-FE110, use the default IP address 192.168.0.10 to log in the camera. You can also assign a static IP address. See *2.1.2 Assigning an IP Address*.
   - For GV-FE420 / 520, if the camera is installed in a LAN without the DHCP server, the default IP address 192.168.0.10 will be applied. You also can assign a static IP address. See *2.1.2 Assigning an IP Address*. If the camera is installed in a LAN with the DHCP server, use GV-IP Device Utility to look up the camera's dynamic IP address. See *2.1.1 Checking the Dynamic IP Address*.

Note: See "Power over Ethernet" in Specifications later in this manual before purchasing a PoE adapter.

2.1.1 Checking the Dynamic IP Address

Follow the steps below to look up the IP address and access the Web interface.

1. Install the GV-IP Device Utility program included on the Software DVD.

Note: The PC installed with GV-IP Device Utility must be under the same LAN with the camera you wish to configure.

2. On the GV-IP Utility window, click the button to search for the IP devices connected in the same LAN. Click the **Name** or **Mac Address** column to sort.

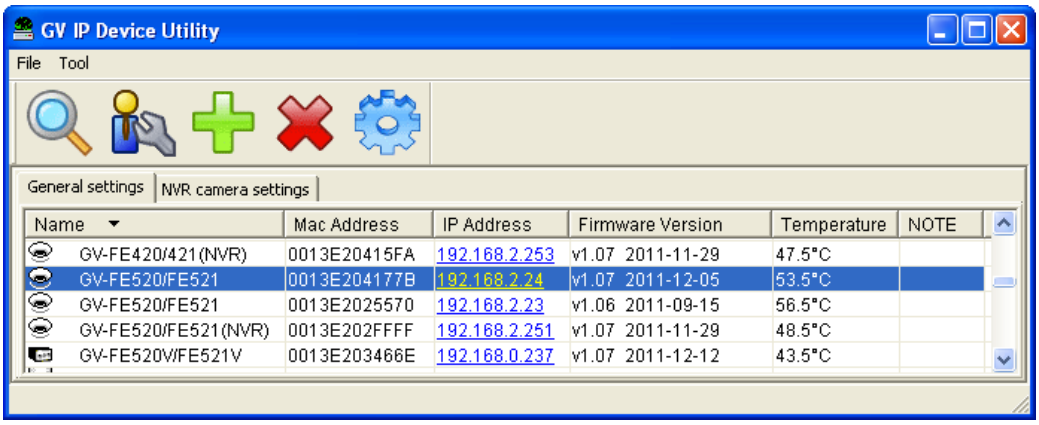


Figure 2-1

3. Find the camera with its Mac Address, click on its IP address and select **Web Page**.

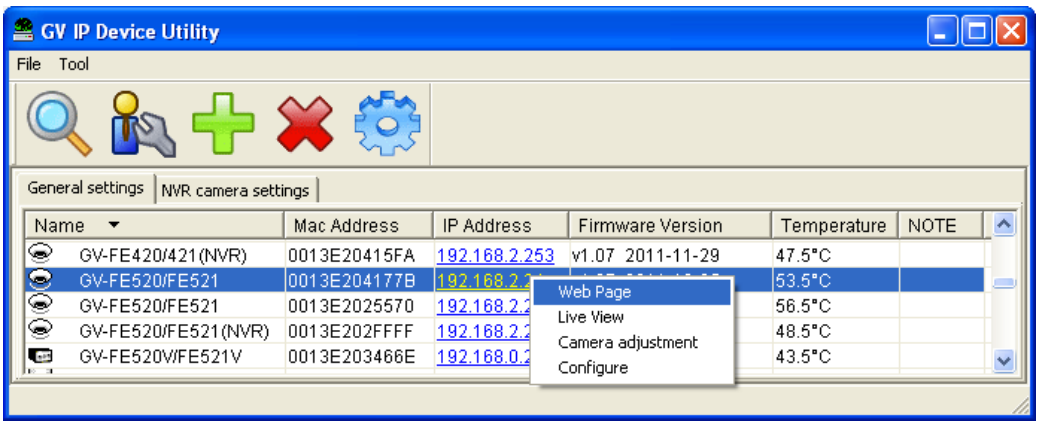


Figure 2-2

4. The login page appears.

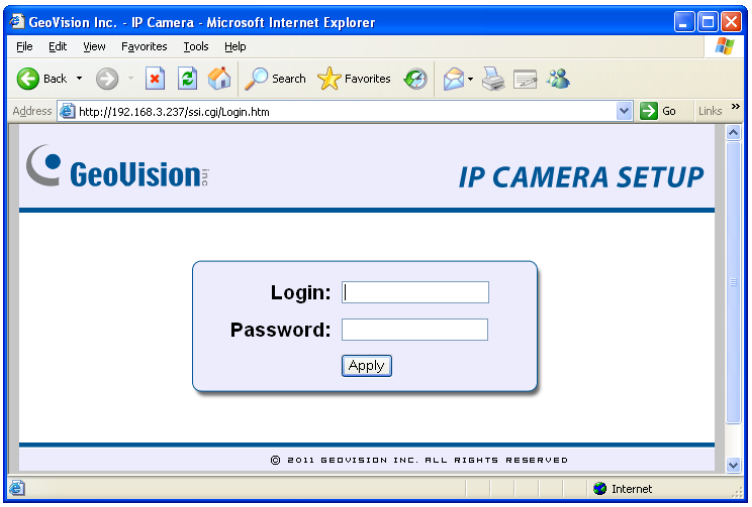


Figure 2-3

5. Type the default ID and password **admin** and click **Apply** to login.

2.1.2 Assigning an IP Address

By default, GV-FE110 is set to a static IP address. Follow the steps below to assign a new IP address.

Note:

1. The camera has a default IP address of **192.168.0.10**. The computer used to set the IP address must be under the same network assigned to the unit.
2. If your router supports the DHCP server, the GV-IPCAM H.264 will obtain a dynamic IP address from the DHCP server each time it connects to the LAN, instead of using 192.168.0.10. The default setting for automatic IP assignment is available in firmware V1.07 or later for GV-FE420 / 520.

1.

1. Open your web browser, and type the default IP address http://192.168.0.10
2. In both Login and Password fields, type the default value **admin**. Click **Apply**.
3. In the left menu, select **Network** and then **LAN** to begin the network settings.

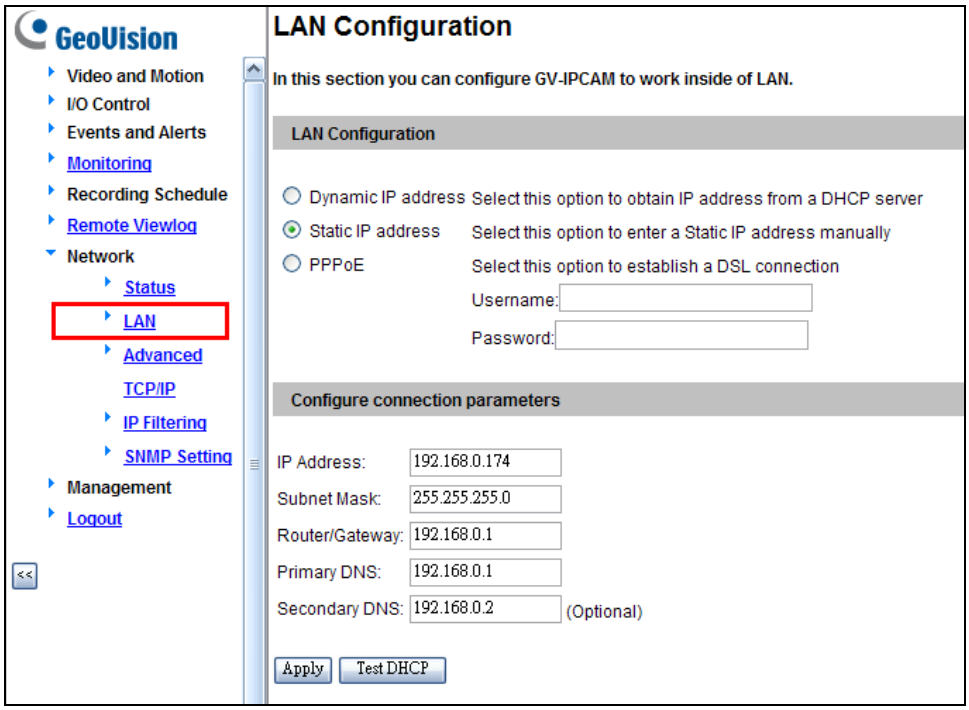


Figure 2-4

4. Select **Static IP address**. Type IP Address, Subnet Mask, Router/Gateway, Primary DNS and Secondary DNS in the **Configure connection parameters** section.
5. Click **Apply**. The camera is now accessible by entering the assigned IP address on the web browser.

IMPORTANT:

- If **Dynamic IP Address** or **PPPoE** is enabled, you need to know which IP address the camera will get from the DHCP server or ISP to log in. If your camera in installed in a LAN, use the GV-IP Device Utility to look up its current dynamic address. See *2.1.1 Checking the Dynamic IP Address*.
  If your camera uses a public dynamic IP address, via PPPoE, use the Dynamic DNS service to obtain a domain name linked to the camera's changing IP address first. For details on Dynamic DNS Server settings, see *4.7.2 Advanced TCP/IP.*
- If **Dynamic IP Address** and **PPPoE** is enabled and you cannot access the unit, you may have to reset it to the factory default settings and then perform the network settings again.

  To restore the factory settings, see *6.3 Restoring to Factory Default Settings*.

2.2 Configuration Basics

Once the camera is properly installed, the following important features can be configured using the browser-based configuration page and are discussed in the following sections in this manual:

- **Date and time adjustment:** see *4.8.1 Date and Time Settings*.
- **Login and privileged passwords:** see *4.8.4 User Account*.
- **Network gateway:** see *4.7 Network*.
- **Camera image adjustment:** see *3.2.3 The Control Panel of the Live View Window*.
- **Video format, resolution and frame rate:** see *4.1.1 Video Settings*.

Chapter 3 Accessing the Camera

Two types of users are allowed to log in to the camera: **Administrator** and **Guest**. The Administrator has unrestricted access to all system configurations, while the Guest has the access to live view and network status only.

3.1 Accessing Your Surveillance Images

Once installed, your camera is accessible on a network. Follow these steps to access your surveillance images:

1. Start the Internet Explorer browser.
2. Type the IP address or domain name of the camera in the **Location/Address** field of your browser.

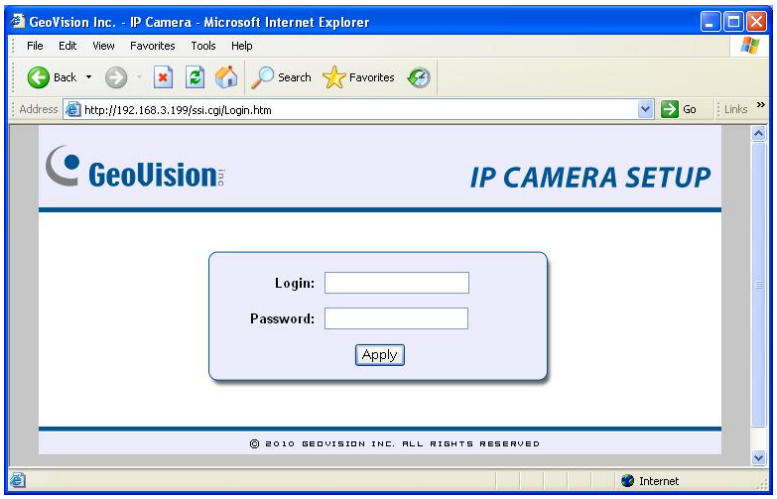


Figure 3-1

3. Enter the login name and password.
   - The default login name and password for Administrator are **admin**.
   - The default login name and password for Guest are **guest**.
4. A video image, similar to the example in Figure 3-2, is now displayed in your browser.

Note: To enable the updating of images in Microsoft Internet Explorer, you must set your browser to allow ActiveX Controls and perform a one-time installation of GeoVision's ActiveX component onto your computer.

3.2 Functions Featured on the Main Page

This section introduces the features of the **Live View** window and **Network Status** on the main page. The two features are accessible by both Administrator and Guest.

Main Page of Guest Mode

▼ **Video and Motion**
- ▼ **Live View**
  - ▶ Camera
- ▼ **Network**
  - ▶ Status

Figure 3-2

3.2.1 The Live View Window

Internet Explorer

When accessing the camera live view using Internet Explorer, the following window appears.

Figure 3-3

No.	Name	Function
1	Play	Plays live video.
2	Stop	Stops playing video.
3	Microphone	Talks to the surveillance area from the local computer.
4	Speaker	Listens to the audio around the camera.
5	Snapshot	Takes a snapshot of live video. --- See *3.2.4 Snapshot of a Live Video*.
6	File Save	Records live video to the local computer. --- See *3.2.5 Video Recording*.
7	Full Screen	Switches to full screen view. Right-click the image to have these options: **Snapshot**, **Resolution**, **Wide Angle Lens Dewarping**, **PIP**, **PAP**, **Geo Fisheye**, **Google Maps**, **Zoom In** and **Zoom Out**.

		--- See *3.2.6 Wide Angle Lens Dewarping* --- See *3.2.7 Picture-in-Picture and Picture-and-Picture View* --- See *3.2.2 Fisheye View* --- See *4.8.2 GPS Maps Settings*
8	I/O Control	Enables the I/O Control Panel or the Visual Automation. --- See *3.2.14 I/O Control*.
9	Show System Menu	Brings up these functions: **Alarm Notify**, **Video and Audio Configuration**, **Remote Config**, **Show Camera Name** and **Image Enhance**. --- See *3.2.9 Alarm Notification*, *3.2.10 Video and Audio Configuration*, *3.2.11 Remote Configuration*, *3.2.12 Camera Name Display* and *3.2.13 Image Enhancement* respectively.

Non-IE Browsers

When accessing the camera live view using Google Chrome, Firefox or Safari, the following window appears. The following functions are not supported using non-IE browsers: Control panel, function buttons, Motion Detection, Tampering Alarm, Visual Automation, Text Overlay, Two-Way Audio, and GPS map settings.

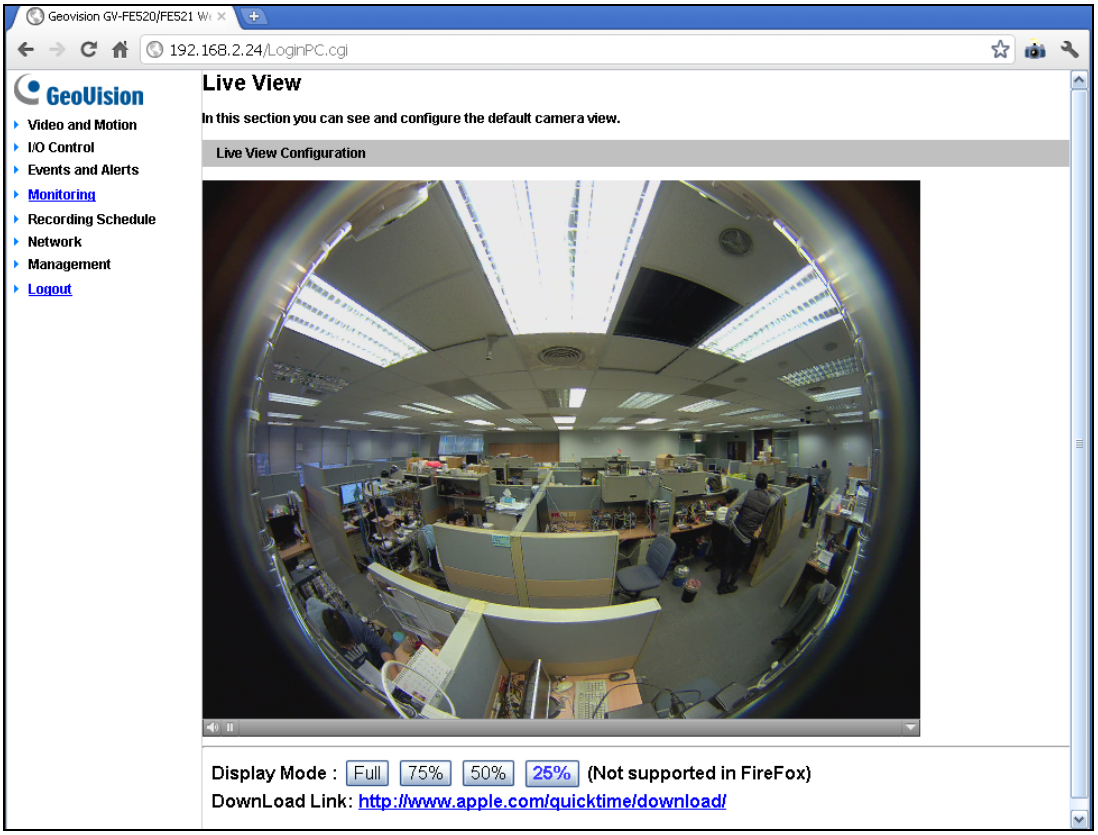


Figure 3-4

3.2.2 Fisheye View

To enable the fisheye options, right-click the live view and select **Geo Fisheye**. Right-click the image again and select **Fisheye Option** to see the following options.

- **Image Alignment:** By default, the image should be properly aligned already. If not, follow the steps below to align the image for each model:
  - **GV-FE110:** Align the red circle with the outer edge of the camera image, and then align it with the inner edge of the image frame to achieve optimal results.

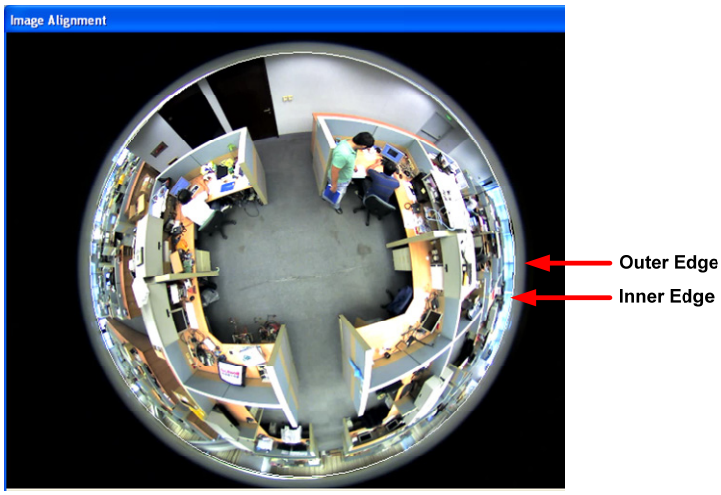


Figure 3-5

  - **GV-FE420/FE520:** Align the red circle with the edge of the camera image. You can eliminate the darker areas toward the edge of the image by making the red circle smaller, but the field of view will be slightly reduced.

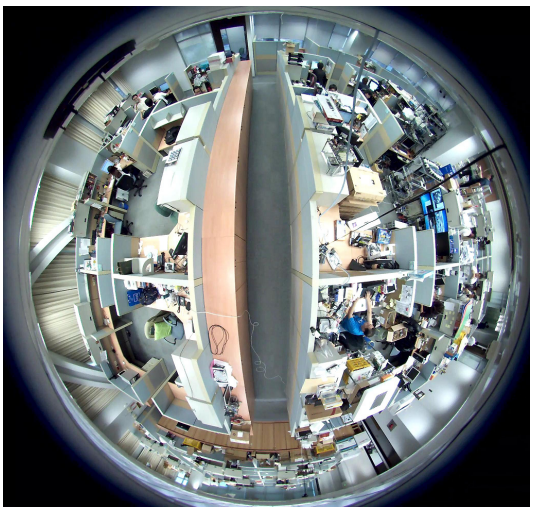


Figure 3-6 (When GV-FE420 images are aligned, all four edges will be cropped slightly.)

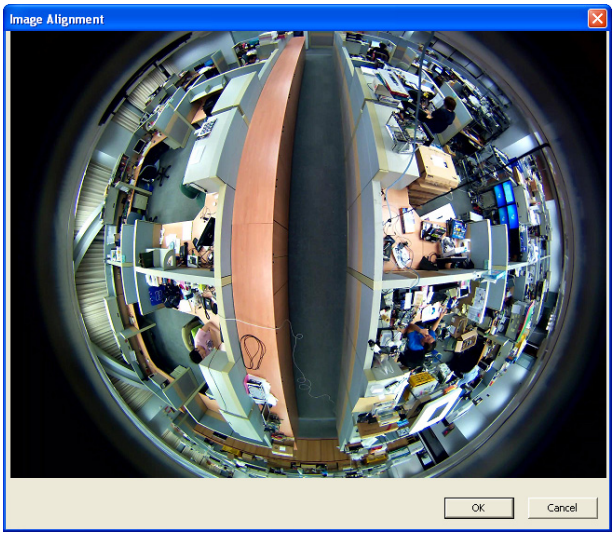
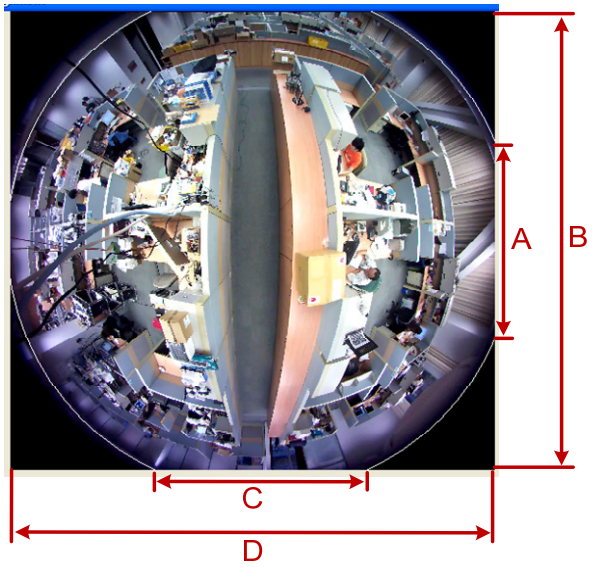


Figure 3-7 (When GV-FE520 images are aligned, top and bottom edges will be cropped slightly.)

Note:

The circular source image of GV-FE420 should be centered and slightly cropped on all four edges. If the image is not centered, please contact your sales representative and send your device back to GeoVision for adjustment.

To determine whether your device needs adjustment, measure the length of a longer cropped edge and the length of that entire edge. Divide the length of the cropped edge by the length of the entire edge. The ratio for left and right edges should be less than or equal to 5/9 and the ratio for the top and bottom edges should be less than or equal to 5/8.



Left and right:

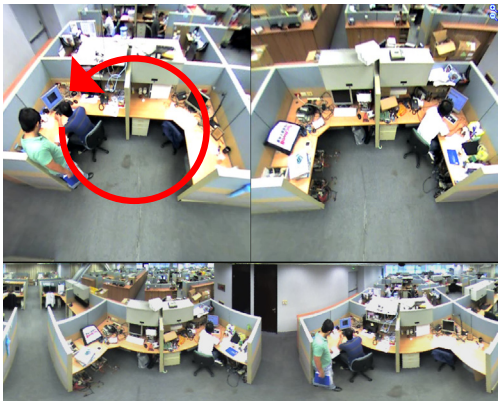
$$\frac{A}{B} \leq \frac{5}{9}$$

Top and bottom:

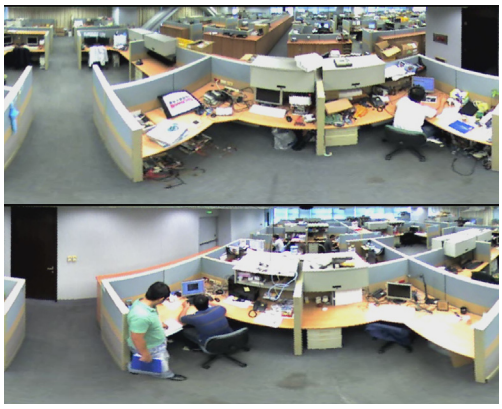
$$\frac{C}{D} \leq \frac{5}{8}$$

- **Camera Modes:** You can choose among four view modes.
  - **Quad view:** Composed of four PTZ views.
  - **360 degree:** Composed of two PTZ view and one 360º panoramic view.
  - **Dual 180 degree:** Composed of two 180º views.
  - **Single view:** Composed of one PTZ view.

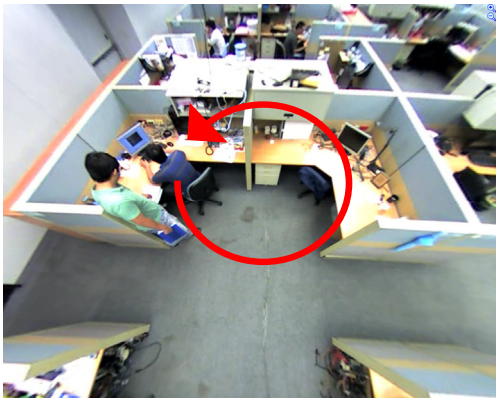
Quad view: 4 PTZ views



360 degree: 2 PTZ views &1 360º view



Dual 180 degree: 2 180º views



Single view: 1 PTZ view

Figure 3-8

Note: When wall mount is selected for **Camera Position**, only one 180º view will be displayed.

- **Camera Position:** Select **Ceiling**, **Wall** or **Ground** according to where the camera is mounted.
- **Adjust AutoPan Speed At Top-Left Channel:** Select low, medium, or high speed to enable Auto Pan for one PTZ view at the rotation speed of your choice. This option applies to **Quad view**, **360º degree** and **Single view**.
- **Zoom:** Select **Zoom In** or **Zoom Out** and then click on the image.

- **Show Source Video at Top-Right Channel:** Shows the circular source image in the top-right quadrant when **Quad view** is selected.
- **360 degrees Object Tracking:** Tracks moving objects under 360 degree view. Refer to *3.2.8 Object Tracking* for more details.
- **Settings:** The following settings are available.
  - **Frame Rate Control**: You can set the frame rate of the live view image.
  - **Show Original Video in Low Resolution:** Shows circular source image when the resolution is low. This option only works on the GV-System when the fisheye camera is connected to a GV-System.
  - **Screen Ratio Setting:** Select a ratio that best fits the display ratio of your computer.

You can drag and drop PTZ view or 180º view to adjust the viewing angle.

3.2.3 The Control Panel of the Live View Window

To open the control panel of the Live View window, click the arrow button on top of the viewer. You can access the following functions by using the left and right arrow buttons on the control panel.

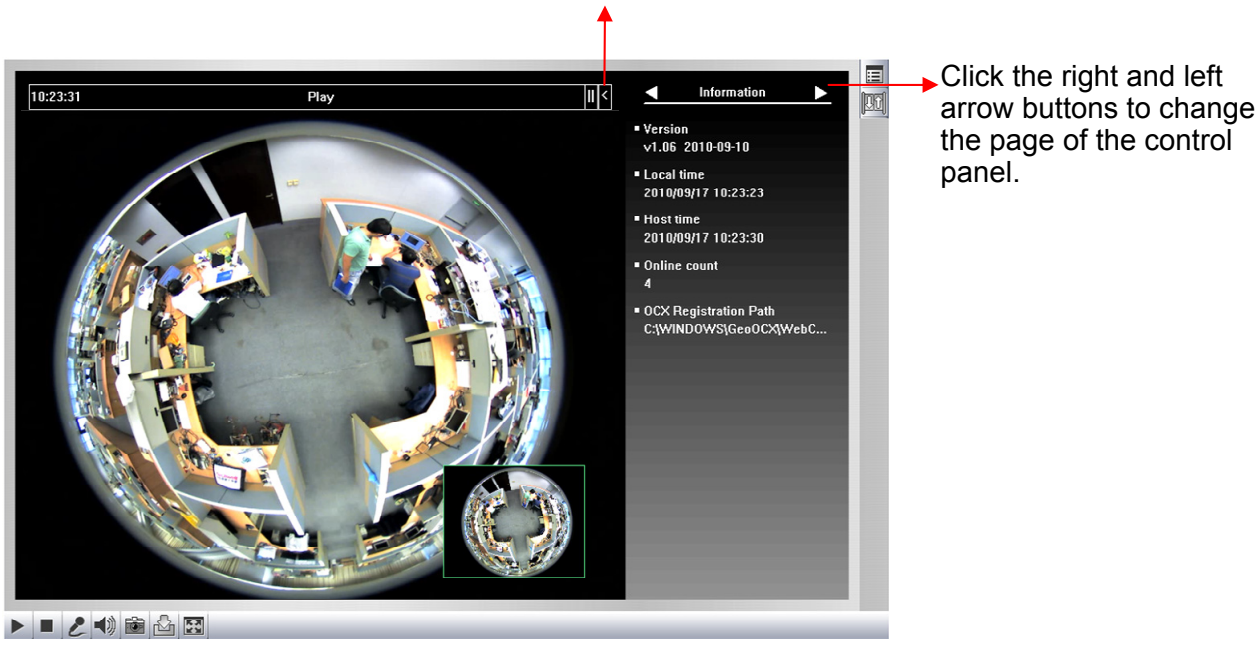


Figure 3-9

Tip: The administrator can also use the GV-IP Device Utility and click the camera's IP address to access the live view and adjust camera image settings.

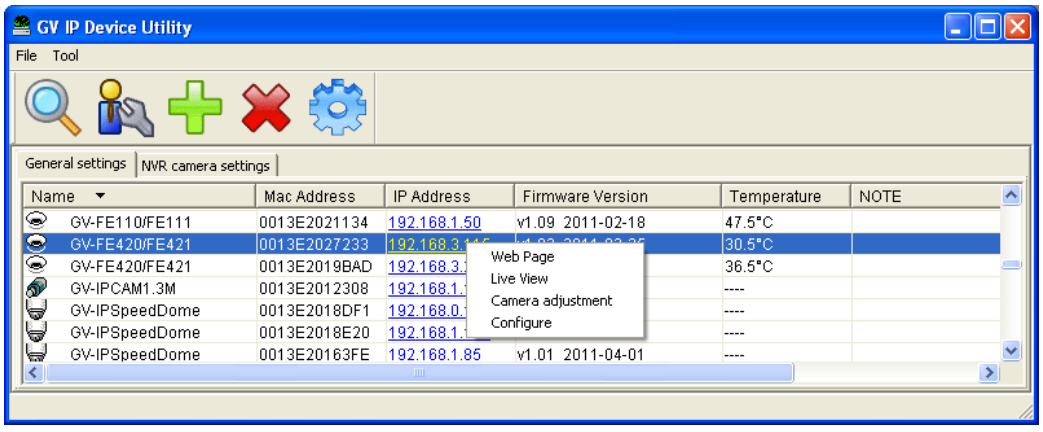


Figure 3-10

[Information] Displays the version of the camera, local time of the local computer, host time of the camera, and the number of users logging in to the camera.

[Video] Displays the current video codec, resolution and data.

[Audio] Displays the audio data rates when the microphone and speaker devices are enabled.

[I/O Control] Provides a real-time graphic display of the input and output status. You can force the output to be triggered by double-clicking its icon.

[Alarm Notify] Displays the captured images by sensor triggers and/or motion detection. For this function to work, you must configure the Alarm Notify settings first. See *3.2.9 Alarm Notification*.

[Camera Adjustment] Allows you to adjust the image quality.

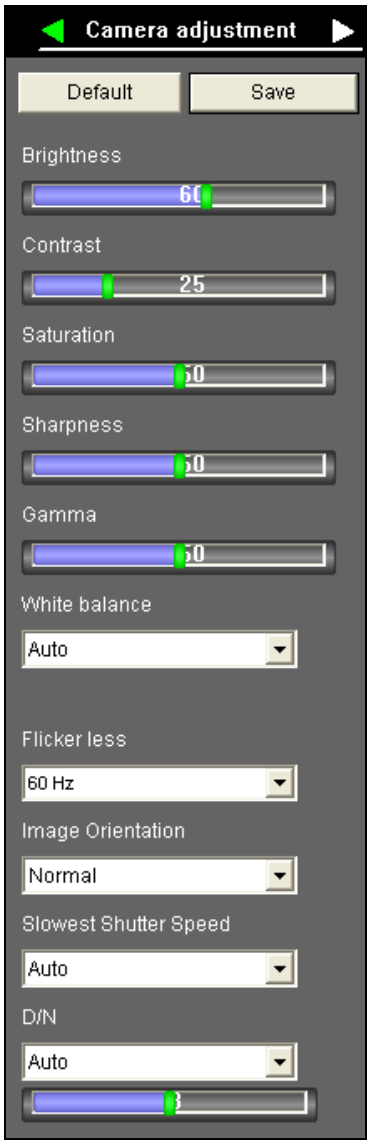


Figure 3-11

- **Brightness:** Adjusts the brightness of the image.
- **Contrast:** Adjusts the relative differences between one pixel and the next.
- **Saturation:** Adjusts the saturation of the image.
- **Sharpness:** Adjusts the sharpness of the image.
- **Gamma:** Adjusts the relative proportions of bright and dark areas.
- **White balance:** The camera automatically adjusts the color to be closest to the image you are viewing. You can choose one of the three presets: **Indoor, Tungsten Lamp** / **Fluorescent**, and **Outdoor**. You can also choose **Manual** to adjust the white balance manually.
- **Flicker less:** The camera automatically matches the frequency of your camera's imager to the frequency of indoor light sources, e.g. fluorescent lighting. You can also select 50 Hz or 60 Hz manually. If these don't match, faint light and dark bars may appear in your images. Check the power utility to determine which frequency is used.
- **Image Orientation:** Changes the image orientation on the Live View window.
- **Shutter Speed:** Determines how long the image sensor is exposed to light. Under low light conditions, a faster shutter speed will lower color quality and image clarity. For manual shutter speed, the options are between 1/5 and 1/8000 sec. For automatic shutter speed, select **Auto** for GV-FE420 / 520; select one of the three Auto options for GV-FE110: Auto (Low Light, Balanced), Auto (Low Light, Speed) or Auto (Low Light, Quality).

Shutter	Speed	Balanced	Quality
Image Brightness	Poor	Good	Excellent
Image Clarity	Poor	Good	Excellent
Image Smoothness	Excellent	Good	Poor

- **D/N:** Sets the Day/Night mode of the camera. When **Auto** is selected, you can use the slider to adjust the sensitivity level of the light sensor. The higher the value, the more sensitive the camera is to light. The D/N function is only available in GV-FE420 with firmware V1.03 or later and in GV-FE520. For details, see *4.1.1 Video Settings*.

[GPS] For details see *4.8.2 GPS Maps Setting*.

[Temperature] Click the **Monitor** button to see the current temperature of the chipset in Celsius and Fahrenheit.

[Download] Allows you to install the programs from the hard drive.

Note:

1. The **Tungsten Lamp** option for White Balance is only supported in GV-FE110.
2. The **Fluorescent** option for White Balance is only supported in GV-FE420/FE520.

3.2.4 Snapshot of a Live Video

To take a snapshot of live video, follow these steps:

1. Click the **Snapshot** button (No. 5, Figure 3-3). The Save As dialog box appears.
2. Specify **Save in**, type the **File name**, and select **JPEG** or **BMP** as **Save as Type**. You may also choose whether to display the name and date stamps on the image.
3. Click the **Save** button to save the image in the local computer.

3.2.5 Video Recording

You can record live video for a certain period of time to your local computer.

1. Click the **File Save** button (No. 6, Figure 3-3). The Save As dialog box appears.
2. Specify **Save in**, type the **File name**, and move the **Time period** scroll bar to specify the time length of the video clip from 1 to 5 minutes.
3. Click the **Save** button to start recording.
4. To stop recording, click the **Stop** button (No. 2, Figure 3-3).

3.2.6 Wide Angle Lens Dewarping

The fisheye source view is curved especially near the edges. Use this function to reduce the warping of live view.

1. Right-click the live view to display a drop-down list.
2. Select **Wide Angle Setting**. The Wide Angle Dewarping Setting window appears.

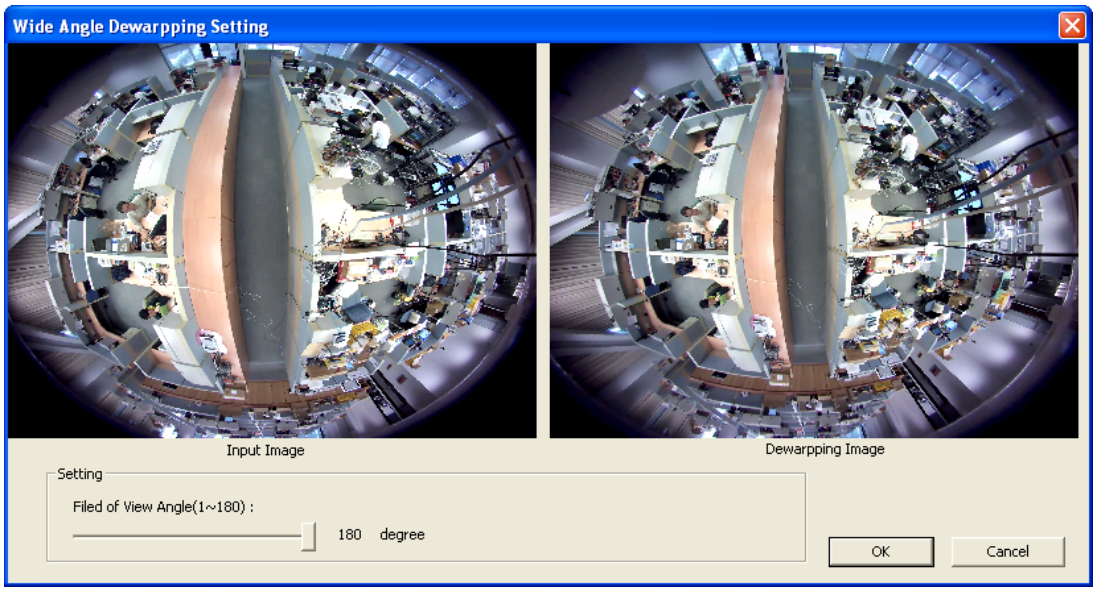


Figure 3-12

3. Slide the slider at the bottom to correct the degree of warping. The adjusted view is shown on the right. Click **OK** to close this window.
4. To enable this configuration, right-click on the live view, select **Wide Angle Lens Dewarping**.

Note: The Wide Angle Lens Dewarping function only applies to the circular source image.

3.2.7 Picture-in-Picture and Picture-and-Picture View

Two types of close-up views are available to provide clear and detailed images of the surveillance area: **Picture-in-Picture (PIP)** and **Picture-and Picture (PAP)**. After entering the live view window, the image is displayed in PIP mode by default. The PIP and PAP views can only be displayed on the hemispherical source image.

Picture-in-Picture View

With the Picture in Picture (PIP) view, you can crop the video to get a close-up view or zoom in on the video.

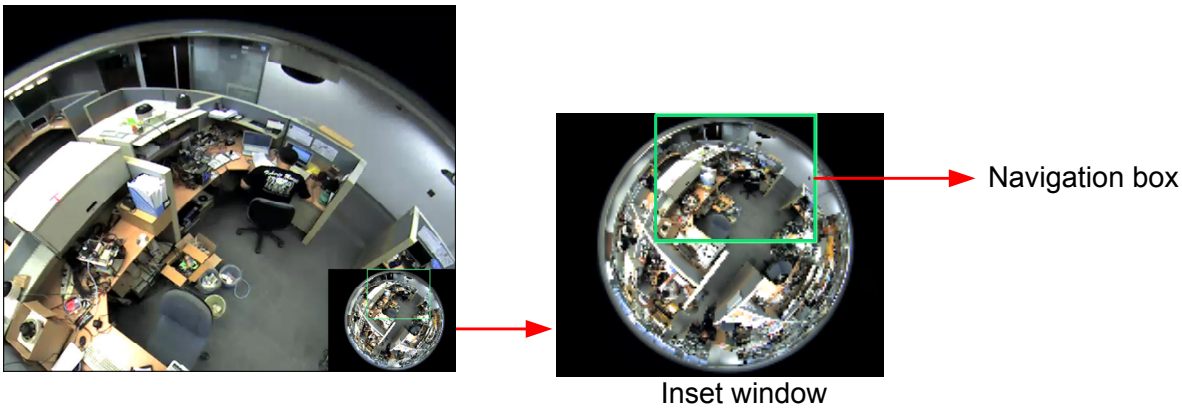


Figure 3-13

1. Right-click the live view and select **PIP**. An inset window appears.
2. Click the inset window. A navigation box appears.
3. Move the navigation box around in the inset window to have a close-up view of the selected area.
4. To adjust the navigation box size, move the cursor to any of the box corners, and enlarge or diminish the box.
5. To exit the PIP view, right-click the image and click **PIP** again.

Picture-and-Picture View

With the Picture and Picture (PAP) view, you can create a split video effect with multiple close-up views on the image. A total of 7 close-up views can be defined.

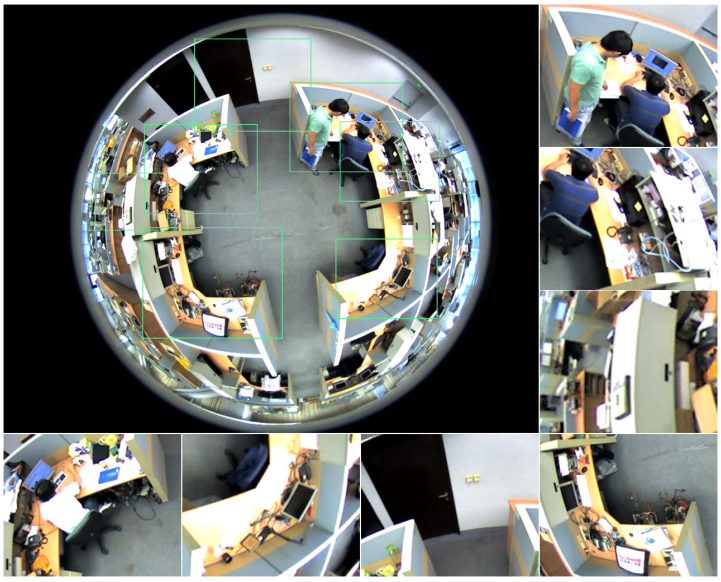


Figure 3-14

1. Right-click the live view and select **PAP**. A row of three inset windows appears at the bottom.
2. Draw a navigation box on the image, and this selected area is immediately reflected in one inset window. Up to seven navigation boxes can be drawn on the image.
3. To adjust a navigation box size, move the cursor to any of the box corners, and enlarge or diminish the box.
4. To move a navigation box to another area on the image, drag it to that area.
5. To change the frame color of the navigation box or hide the box, right-click the image, select **Mega Pixel Setting** and click one of these options:
   - **Display Focus Area of PAP Mode:** Displays or hides the navigation boxes on the image.
   - **Set Color of Focus Area:** Changes the color of the box frames.
6. To delete a navigation box, right-click the desired box, select **Focus Area of PAP Mode** and click **Delete**.
7. To exit the PAP view, right-click the image and click **PAP** again.

3.2.8 Object Tracking

You can track moving objects in fisheye live view. The function is only available when the fisheye camera mode is set to be **Geo Fisheye: 360 degree**. When motion is detected, the top-right channel will start tracking the moving object and in the 360 degree view at the bottom, the moving object will be highlighted.

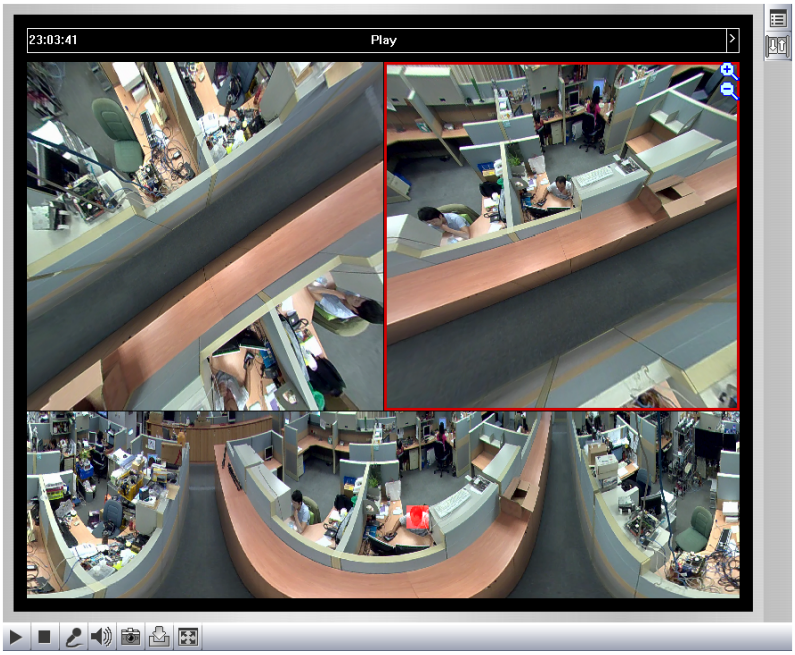


Figure 3–15

1. Right-click the fisheye view, select the camera number and select **Geo Fisheye**.
2. Right-click the fisheye view, select **Fisheye Option**, select **Camera Mode** and select **Geo Fisheye: 360 degree**.
3. Right-click the fisheye view, select **Fisheye Option**, select **360 Object Tracking** and select **Advanced Settings**. This dialog box appears.

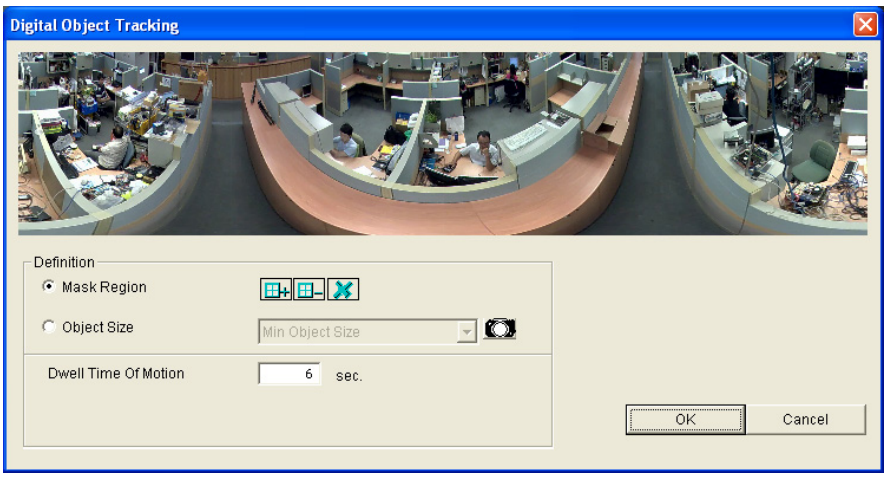


Figure 3-16

4. Use the options below to customize object tracking.

   - **Mask Region:** Use the mouse to outline a mask region where motion will be ignored.
   - **Object Size:** Click the button to pause the live view and then use the mouse to outline the maximum and minimum size of the targeted object.
   - **Dwell Time of Motion:** After a targeted object stops moving, the highlighted region and the top-right channel will remain fixed on the area for the number of seconds specified. Any new motion detected during the dwell time will be ignored to prevent the camera view from frequently jumping from one area to another.

5. Right-click the fisheye view, select **Fisheye Option**, select **360 Object Tracking** and select **Tracking** to enable object tracking.

3.2.9 Alarm Notification

After input triggers and motion detection, you can be alerted by a pop-up live video and view up to four captured images.

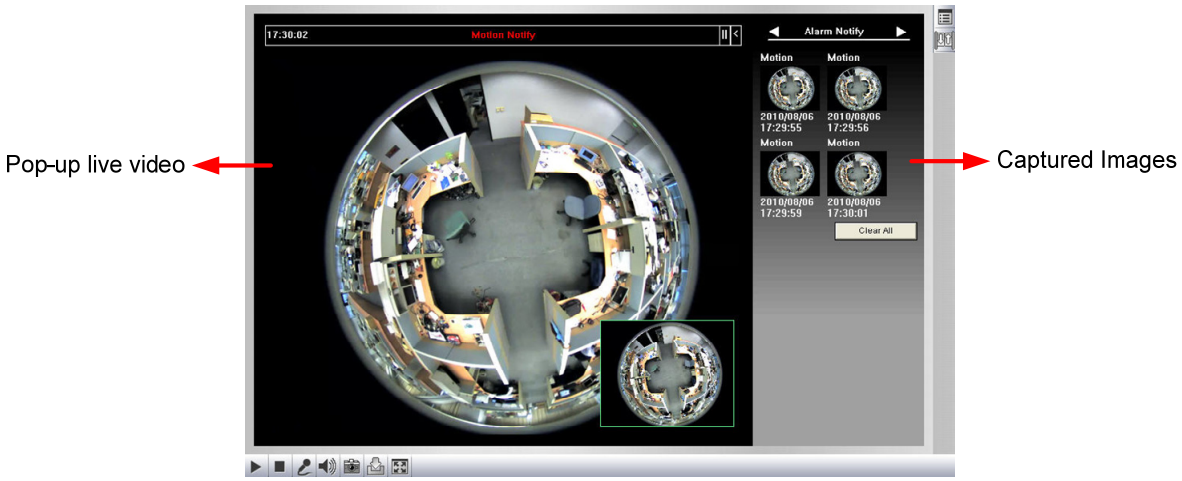


Figure 3-17

To configure this function, click the **Show System Menu** button (No. 11, Figure 3-3), and select **Alarm Notify**. This dialog box appears.

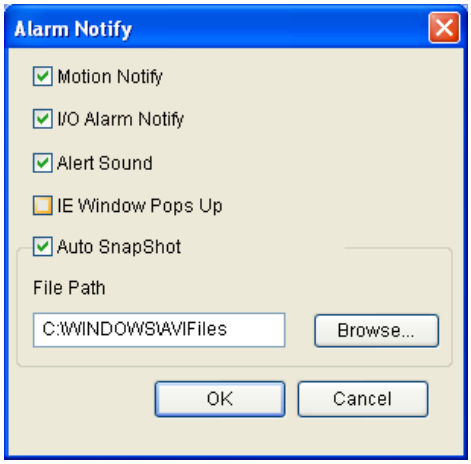


Figure 3-18

- **Motion Notify:** Once motion is detected, the captured images are displayed on the control panel of the Live View window.
- **I/O Alarm Notify:** Once the input device is triggered, the captured images are displayed on the control panel of the Live View window. For this function to work, the Administrator needs to install the input device properly. See *4.2.1 Input Settings*.
- **Alert Sound:** Activates the computer alarm on motion and input-triggered detection.
- **IE Window Pops up:** The minimized Live View window pops up on motion and input-triggered detection.

- **Auto Snapshot:** The snapshot of live video is taken every 5 seconds on motion and input-triggered detection.
- **File Path:** Assigns a file path to save the snapshots.

Note: The Administrator can adjust the motion detection area by using the Motion Detection function. See *4.1.3 Motion Detection* for more details.

3.2.10 Video and Audio Configuration

You can enable the microphone and speaker for two-way audio communication and adjust the audio volume. To change audio configuration, click the **Show System Menu** button (No. 9, Figure 3-3), and select **Video and Audio Configuration**.

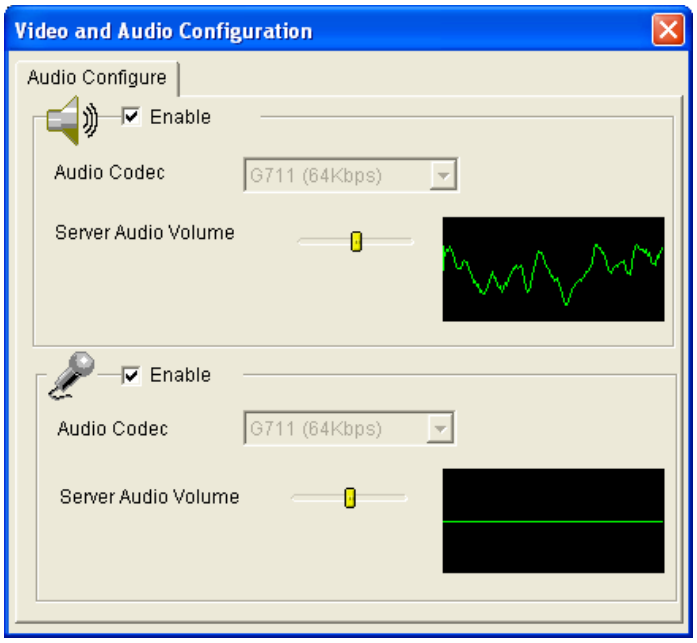


Figure 3-19

3.2.11 Remote Configuration

You can view the connection status of the central monitoring stations and upgrade firmware over the network. Click the **Show System Menu** button (No. 9, Figure 3-3), and select **Remote Config**. The Remote Config dialog box will appear.

[Firmware Upgrade] In this tab, you can upgrade the firmware over the network. For details, see *Chapter 6 Advanced Applications*.

3.2.12 Camera Name Display

To display the camera name on the image, click the **Show System Menu** button (No. 9, Figure 3-3), and select **Show Camera Name**.

3.2.13 Image Enhancement

To enhance the image quality of live video, click the **Show System Menu** button (No. 9, Figure 3-3), and select **Image Enhance**. This dialog box appears.

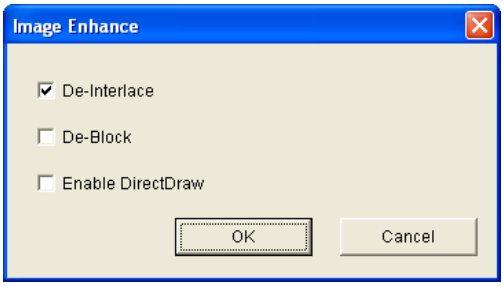


Figure 3-20

- **De-Interlace:** Coverts the interlaced video into non-interlaced video.
- **De-Block:** Removes the block-like artifacts from low-quality and highly compressed video.
- **Enable DirectDraw:** Activates the DirectDraw function.

3.2.14 I/O Control

The I/O Control window provides real-time graphic displays of camera status, I/O status, and alarm events. Additionally, you can remotely force output to be triggered.

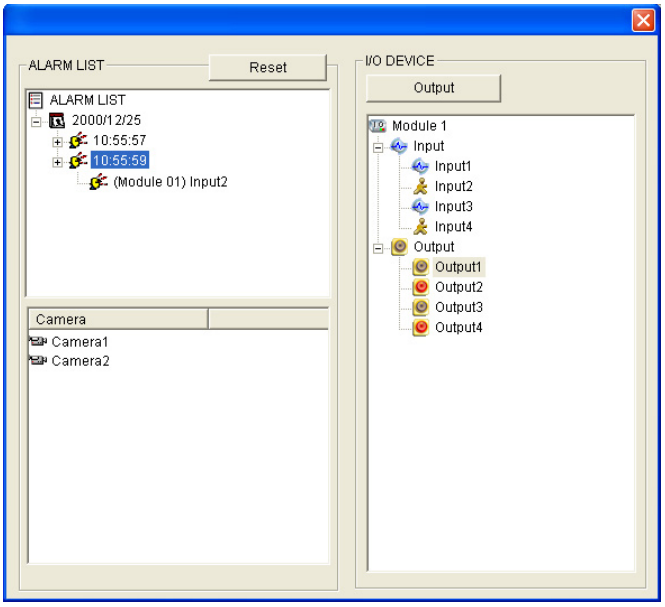


Figure 3-21

- To display the I/O control window, click the **I/O Control** button (No. 8, Figure 3-3).
- The Alarm List is displayed in three levels. The first level indicates date, the second indicates time, and the third indicates alarm ID. Clicking the **Reset** button will clear the list.
- To trigger an output device, highlight an output and then click the **Output** button.

3.2.15 Visual Automation

The Visual Automation allows you to change the current state of the electronic device by simply clicking on its image, e.g. turning the light ON. This feature is only available when the Visual Automation is set ahead by the Administrator. For details, see *4.1.6 Visual Automation.*

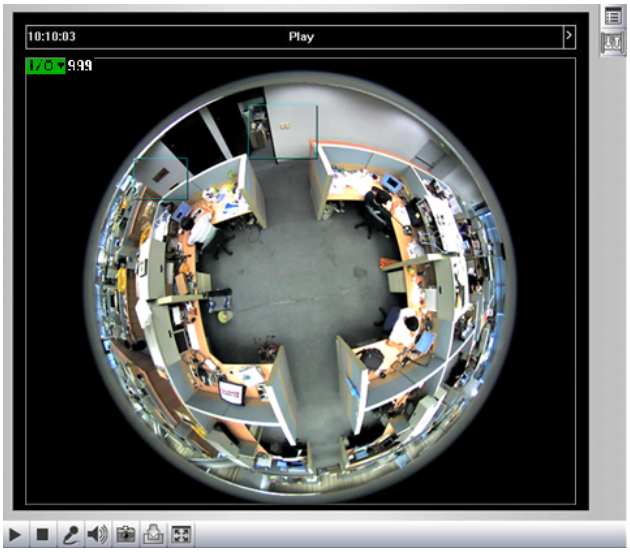


Figure 3-22

- To access this feature, click the **I/O Control** button (No. 8, Figure 3-3) and select **Visual Automation**.
- To change the style of the set areas, right-click the image and select **Visual Automation**. Right-click the image again to see these options:
  - **Show All:** Displays all set areas.
  - **Rect Float:** Embosses all set areas.
  - **Set Color:** Changes the frame color of all set areas.

3.2.16 Network Status

To view the network status, in the left menu, click **Network** and select **Status**.

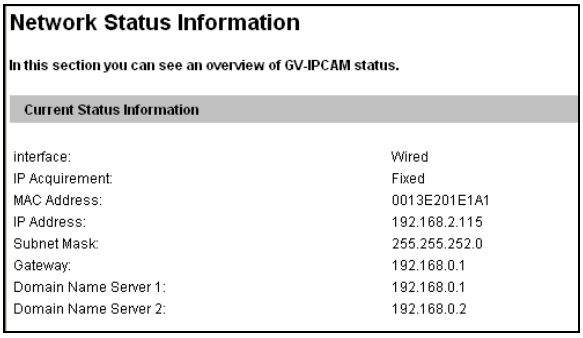


Figure 3-23

Chapter 4 Administrator Mode

The Administrator can access the system configuration through the network. Eight categories of configurations are involved in the system configuration: **Video and Motion**, **I/O Control**, **Events and Alerts**, **Monitoring**, **Recording Schedule**, **Remote ViewLog**, **Network** and **Management**.

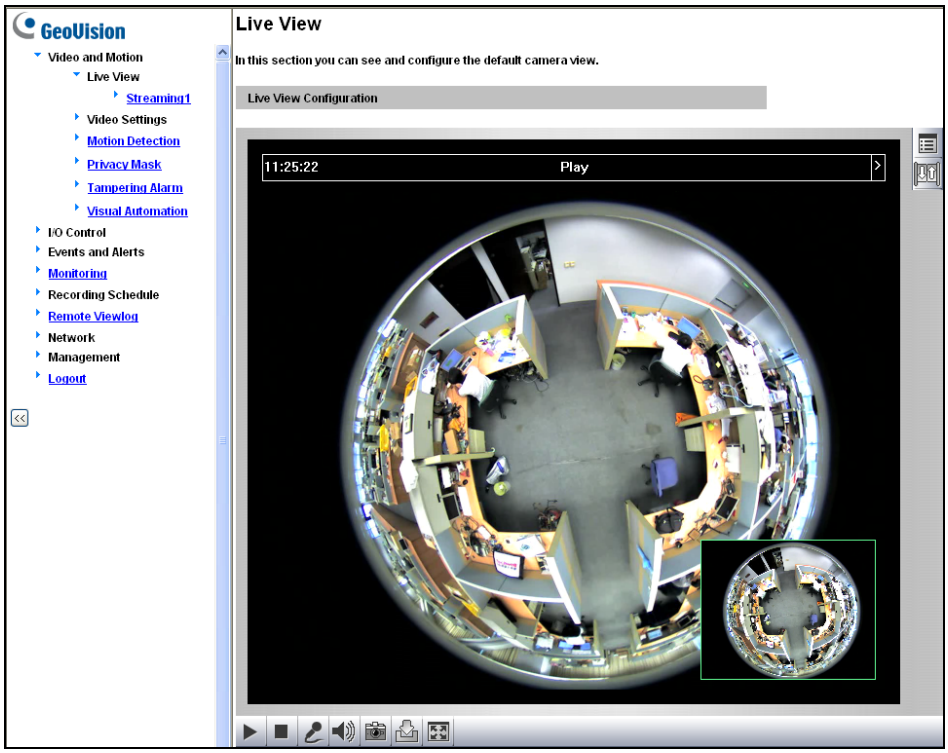


Figure 4-1

List of Menu Options

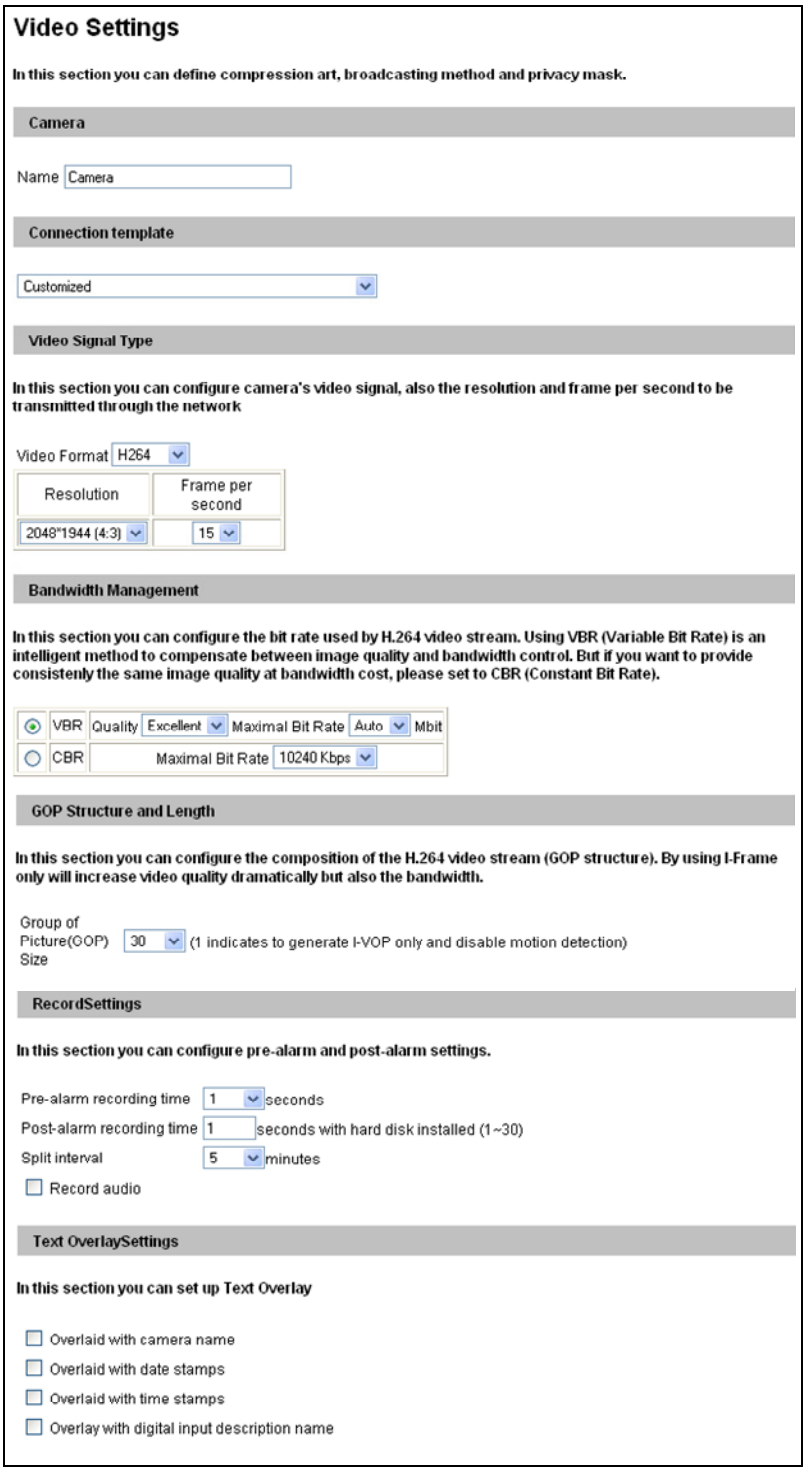
Find the topic of interest by referring to the section number prefixed to each option.

4.1 Video and Motion	4.1.1 Video Settings 4.1.2 Motion Detection 4.1.3 Privacy Mask 4.1.4 Text Overlay 4.1.5 Tampering Alarm 4.1.6 Visual Automation
4.2 I/O Control	4.2.1 Input Setting 4.2.2 Output Setting
4.3 Events and Alerts	4.3.1 Email 4.3.2 FTP 4.3.3 Center V2 4.3.4 VSM 4.3.5 Backup Center 4.3.6 Video Gateway / Recording Server 4.3.7 ViewLog 4.3.8 RTSP
4.4 Monitoring	
4.5 Recording Schedule	4.5.1 Recording Schedule Settings 4.5.2 I/O Monitor Settings
4.6 Remote Viewlog	
4.7 Network	4.7.1 LAN 4.7.2 Advanced TCP/IP 4.7.3 IP Filtering 4.7.4 SNMP Setting
4.8 Management	4.8.1 Date and Time Settings 4.8.2 GPS Maps Settings 4.8.3 Storage Settings 4.8.4 User Account 4.8.5 Log Information 4.8.6 System Log 4.8.7 Tools

4.1 Video & Motion

This section includes the video image settings and how the images can be managed by using Motion Detection, Privacy Mask, Text Overlay, Tampering Alarm and Visual Automation.

4.1.1 Video Settings


Video Settings
In this section you can define compression art, broadcasting method and privacy mask.
Camera
Name Camera
Connection template
Customized
Video Signal Type
In this section you can configure camera's video signal, also the resolution and frame per second to be transmitted through the network
Video Format H264
Resolution
Frame per second
2048*1944 (4:3)
15
Bandwidth Management
In this section you can configure the bit rate used by H.264 video stream. Using VBR (Variable Bit Rate) is an intelligent method to compensate between image quality and bandwidth control. But if you want to provide consistenly the same image quality at bandwidth cost, please set to CBR (Constant Bit Rate).
VBR Quality Excellent Maximal Bit Rate Auto Mbit
CBR Maximal Bit Rate 10240 Kbps
GOP Structure and Length
In this section you can configure the composition of the H.264 video stream (GOP structure). By using I-Frame only will increase video quality dramatically but also the bandwidth.
Group of Picture(GOP) Size 30 (1 indicates to generate I-VOP only and disable motion detection)
RecordSettings
In this section you can configure pre-alarm and post-alarm settings.
Pre-alarm recording time 1 seconds
Post-alarm recording time 1 seconds with hard disk installed (1~30)
Split interval 5 minutes
Record audio
Text OverlaySettings
In this section you can set up Text Overlay
Overlaid with camera name
Overlaid with date stamps
Overlaid with time stamps
Overlay with digital input description name

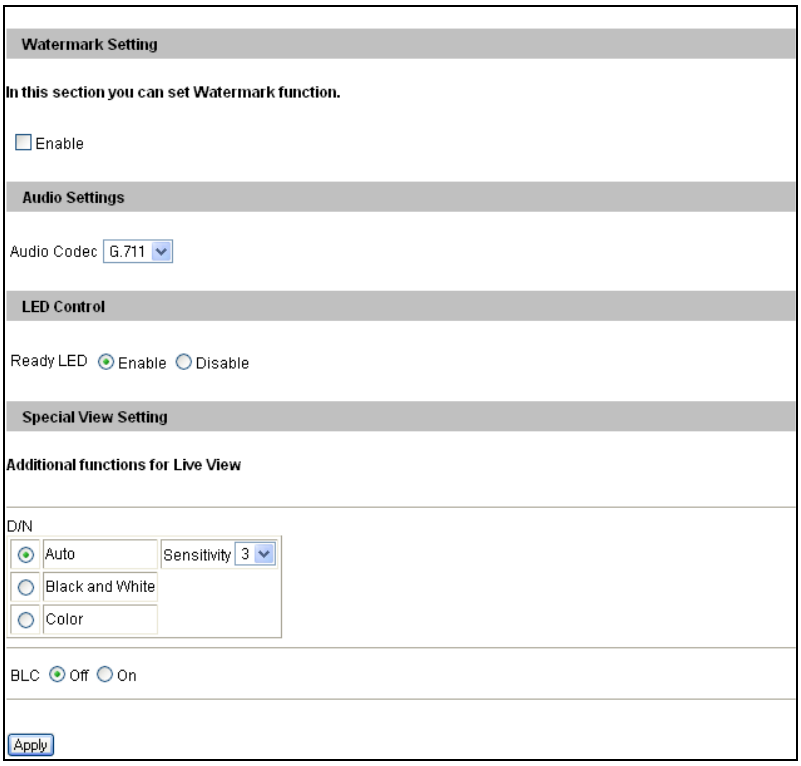


Figure 4-2

[Name]

Rename the video stream. The camera name will appear on the Live View. To display the name of the video stream on the Live View window, see *3.2.12 Camera Name Display*.

[Connection Template]

Select the type of your network connection. Unless you select **Customized**, this option will automatically bring up the recommended video resolution, frame rate, bandwidth and GOP size.

[Video Signal Type]

The codec options, resolutions and maximum frame rates are listed as below:

	Codec Options	Image Resolution	Maximum Frame Rate
GV-FE110	H.264, MPEG4, MJPEG	1280 x 1024	15 fps
GV-FE420	H.264, MJPEG	2048 x 1944	15 fps
GV-FE520	H.264, MJPEG	2560 x 1920	10 fps
		2048 x 1944	15 fps

[Bandwidth Management]

When using MPEG-4 or H.264, it is possible to control the bitrate, which in turn allows the amount of bandwidth usage to be controlled.

- **VBR (Variable Bitrate):** The quality of the video stream is kept as constant as possible at the cost of a varying bitrate. The bandwidth is used much more efficiently than a comparable CBR. You can set a limit to the bit rate by specifying a **Maximal Bit Rate**. Set the image quality to one of the 5 standards: **Standard, Fair**, **Good**, **Great**, and **Excellent**.
- **CBR (Constant Bitrate):** CBR is used to achieve a specific bitrate by varying the quality of the stream. Use the **Maximal Bit Rate** drop-down list to select a bitrate.

[GOP Structure and Length]

Use the **Group of Picture(GOP) Size** drop-down list to set the number of frames between every key frame. This option is only available when H.264 or MPEG-4 is selected for codec. The limit is 1 key frame for every 30 frames.

[Record Settings]

The alarm settings allow you to capture images before and/or after the motion or I/O event happens.

- **Pre-alarm recording time:** Activates video recording before an event occurs. Set the recording time to 1 or 2 seconds. The recording is saved in the buffer of the camera.
- **Post-alarm recording time:** Activates video recording onto the inserted memory card after an event occurs. Set the recording time from 1 to 30 seconds.
- **Split Interval:** Sets the time length of each event file from 1 to 5 minutes.
- **Record Audio:** Activates audio recording when an event occurs.

[Text Overlay Settings]

Overlay the image with camera name, date, time and/or the input name.

- **Overlaid with camera name:** Includes camera names on live and recorded videos.
- **Overlaid with date stamps:** Includes date stamps on live and recorded videos.
- **Overlaid with time stamps:** Includes time stamps on live and recorded videos.
- **Overlaid with digital input description name:** Includes the names of selected inputs on live and recorded videos.

[Watermark] Enable this option to watermark all recordings. The watermark allows you to verify whether the recorded video has been tampered with. See *6.4 Verifying Watermark*.

[Audio Settings] Use the drop-down list to select between G.711 and AAC audio codec.

Note: The AAC option is only supported in GV-FE420/520 with GV-System version 8.5 or later. For versions including and prior to 8.4, audio output will not be supported if AAC is selected.

[LED Control] Note this function is not supported in GV-FE110. Select **Disable** if you do not want to use the System Status LED (No. 8, Figure 1-2).

[Special View Setting]

- **D/N:** Sets the Day/Night mode of the camera.
  - **Auto:** Select **Auto** for the camera to detect the amount of light present and automatically switch to monochrome in a poorly-lit scene. Use the drop-down list to adjust the sensitivity level of light sensor from 1 to 5. The higher the value, the more sensitive the camera is to light.
  - **Black and White:** Select this option for the live view to be in monochrome.
  - **Color:** Select this option for the live view to be in color.
- **BLC:** Enable backlight compensation to adjust the exposure when the subject is positioned in front of a bright light source.

Note: The D/N function and Backlight Compensation are only available in GV-FE420 (V1.03 or later) and GV-FE520.

4.1.2 Motion Detection

Motion detection is used to generate an alarm whenever movement occurs in the video image. You can configure up to 8 areas with different sensitivity values for motion detection.

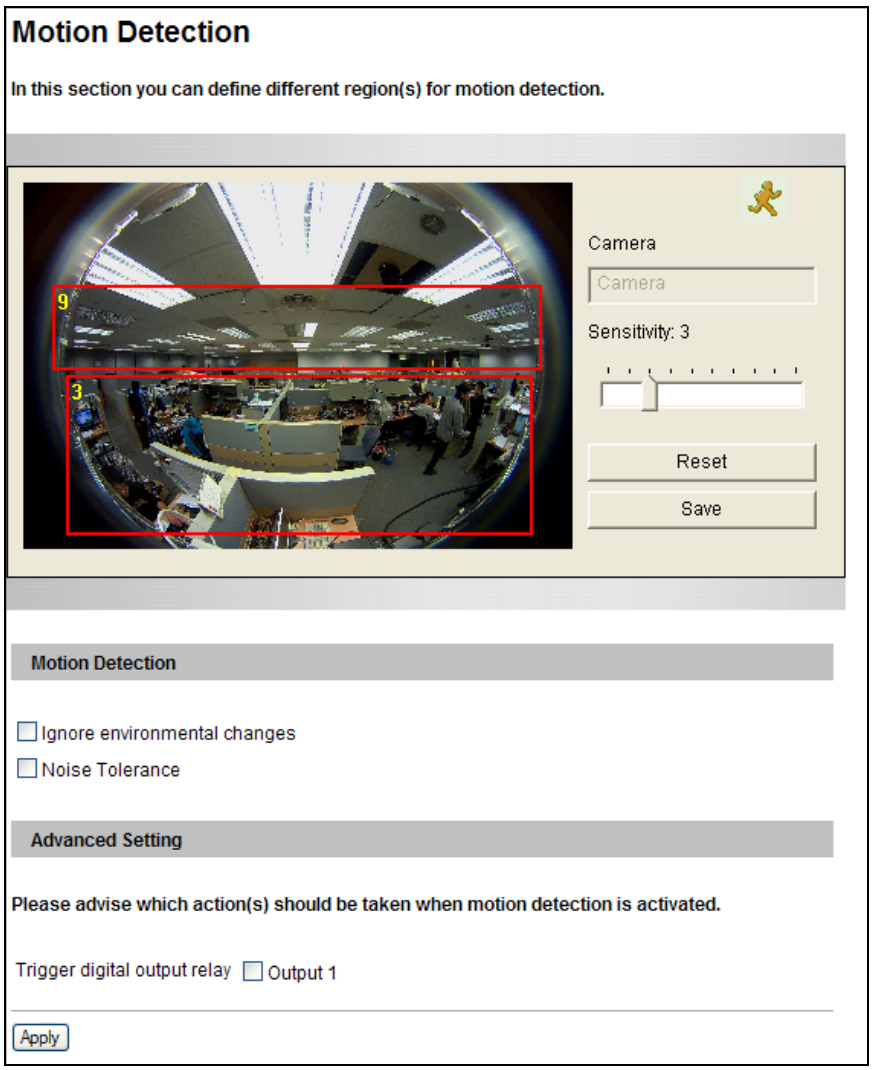


Figure 4-3

For GV-FE110, the default detection area is set to the entire camera view with a sensitivity level of 2. To define a different detection area, click **Reset**. For GV-FE420 / 520, the motion detection function is disabled by default. Follow the steps below to set up motion detection.

1. Select the desired sensitivity level by moving the slider. The higher the value, the more sensitive the camera is to motion.
2. Drag an area on the image. Click **Add** when you are prompted to confirm the setting.
3. To create several areas with different sensitivity values, repeat Steps 2 and 3.
4. Click **Save** to save the above settings.

5. Under Motion Detection section, select the following options to reduce false alarm.
   - **Ignore environmental changes:** Ignore environmental changes in the camera view such as rain or snow.
   - **Noise Tolerance:** Ignore video noise when light changes.
6. To trigger the alarm output when motion is detected, select **Output1** and click the **Apply** button. To activate the output settings, you must also start **Input** monitoring manually or by schedule. For related settings, see *4.4 Monitoring*.

4.1.3 Privacy Mask

The Privacy Mask can block out sensitive areas from view, covering the areas with dark boxes in both live view and recorded clips. This feature is ideal for locations where displays, keyboard sequences (e.g. passwords), and confidential information might be visible.

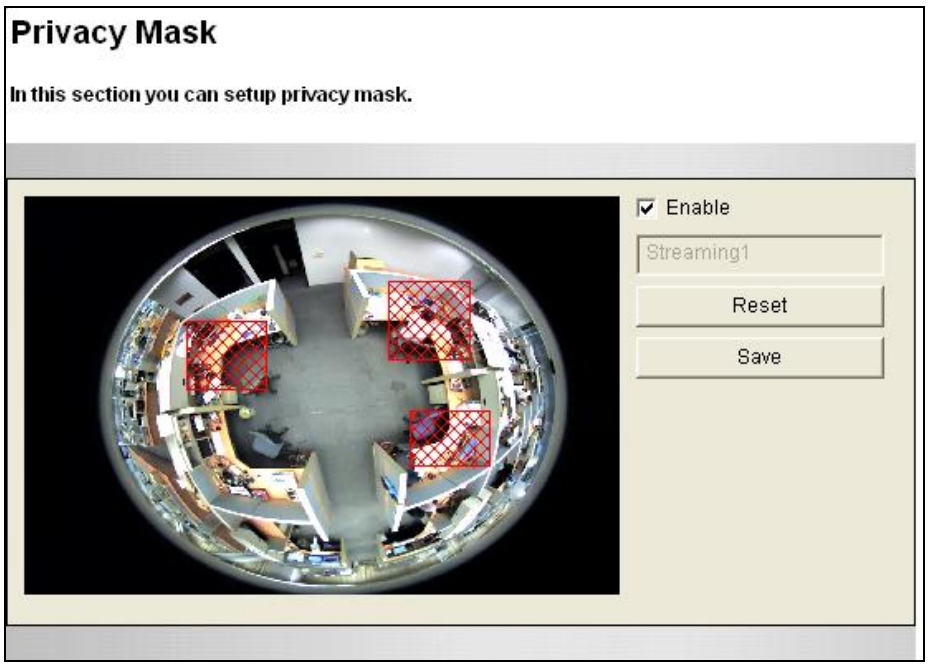


Figure 4-4

1. Select the **Enable** option.
2. Drag the area(s) where you want to block out on the image. Click **Add** when you are prompted to confirm the setting.
3. Click the **Save** button to save the settings.

4.1.4 Text Overlay

The Text Overlay allows you to overlay any text in any place on the camera view. Up to 16 text messages can be created on one camera view. The overlaid text will be saved in the recordings.

Figure 4-5

1. Select the font, font style and font size in a pop-up window.
2. Select the **Enable** option.
3. Click any place on the image. This dialog box appears.

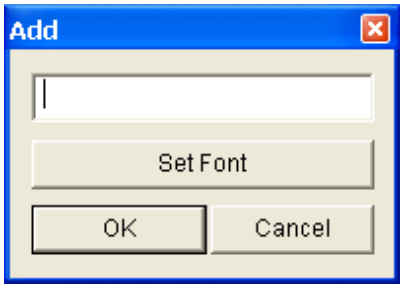


Figure 4-6

4. Type the desired text, and click **OK**. The text is overlaid on the image.
5. Drag the overlaid text to a desired place on the image.
6. Click **Set Font** to modify the font settings.
7. Click **Save** to apply the settings, or click **Load** (Undo) to revert to the last saved setting.
8. Click **Preview** to see how the text will appear on the image. Click **Close** to end the preview.

4.1.5 Tampering Alarm

The Tampering Alarm is used to detect when the camera is being physically tampered with. An alarm can be generated when the camera is moved, covered up, or out of focus. The alarm methods include triggering the output device and e-mail alert. To enable the tampering alarm, first set up these alarm methods properly:

- To trigger the output device when a tampering event occurs, enable the output setting and select **Tampering Alarm**. See *Output Setting* in *4.2.2 Output Settings*.
- To trigger the e-mail alert when a tampering event occurs, enable the e-mail setting and select **Tampering Alarm**. See *4.3.1 E-Mail.*

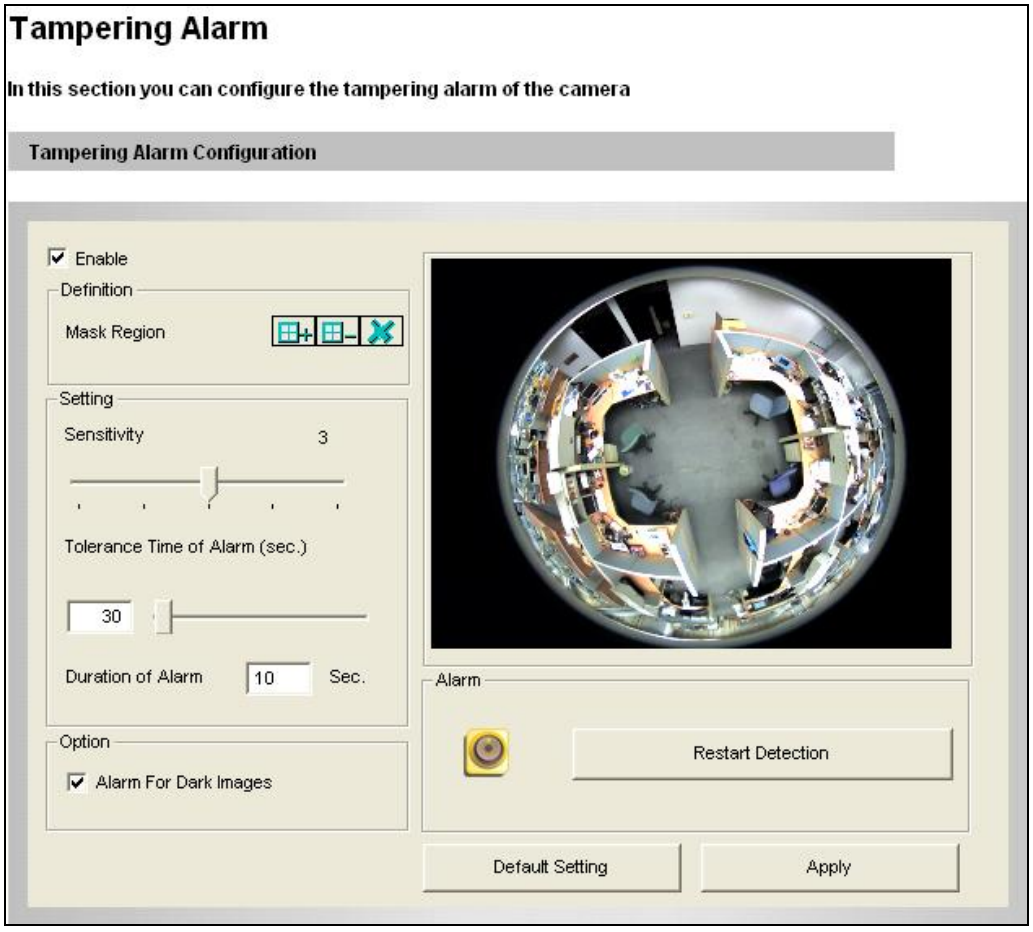


Figure 4-7

To configure the tampering alarm:

1. Select **Enable**.
2. If you want the camera to ignore any movement or scene change in certain areas, click the button to drag areas on the camera view.
3. Select the desired detection sensitivity by moving the slider. The higher the value, the more sensitive the camera is to scene changes.
4. In the **Tolerance Time of Alarm** field, specify the time length allowed for scene changes before an alarm is generated.
5. In the **Duration of Alarm** field, specify the duration of the alarm after which the triggered output device will be turned off.
6. To trigger an alarm when the scene turns dark, e.g. the lens of camera has been covered, select **Alarm for Dark Images**.
7. Click **Apply** to save all the settings.
8. Start monitoring to enable the function. To have output alarm, it is required to start **Input** monitoring. See *4.4 Monitoring.*

When the camera has been tampered with, the output device can be activated. To turn off the output device immediately, return to this setting page, and click **Restart Detection**.

4.1.6 Visual Automation

This intuitive feature helps you automate any electronic device by triggering the connected output device. When you click on the image of the electronic device, you can change its current state, e.g. turning the light on.

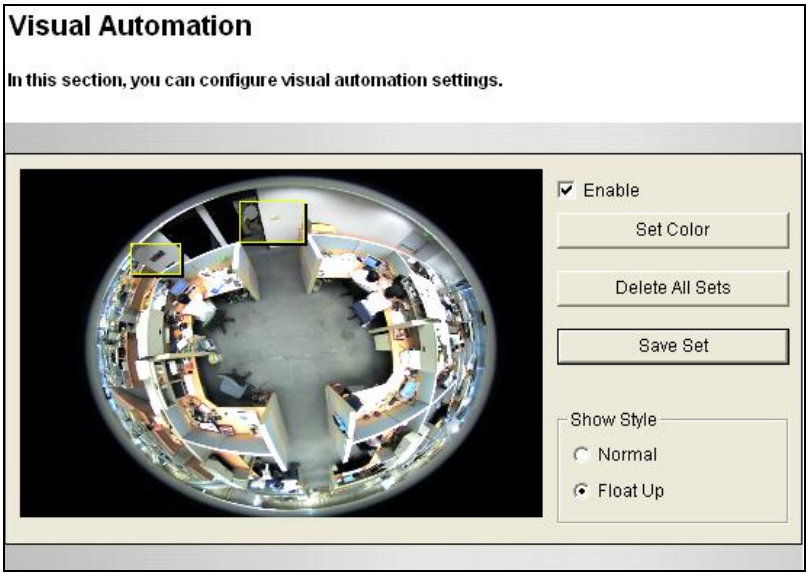


Figure 4-8

1. Select the **Enable** option.
2. Drag an area on the image of the electronic device. This dialog box appears.

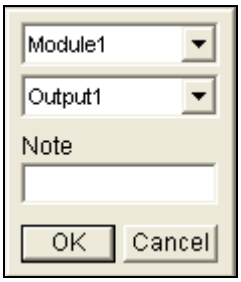


Figure 4-9

3. Assign the connected module and output device. In the Note filed, type a note to help you identify the device. Click **OK** to save the settings.
4. To change the frame color of the set area, click the **Set Color** button.
5. To emboss the set area, select **Float Up**; or keep it flat by selecting **Normal**.
6. Click the **Save Set** button to apply the settings.

To perform the function, see *3.2.15 Visual Automation*.

4.2 I/O Control

The I/O wires connected to the camera provide the interface for one input device and one output device.

4.2.1 Input Settings

To activate the sensor input, select **Enable**.

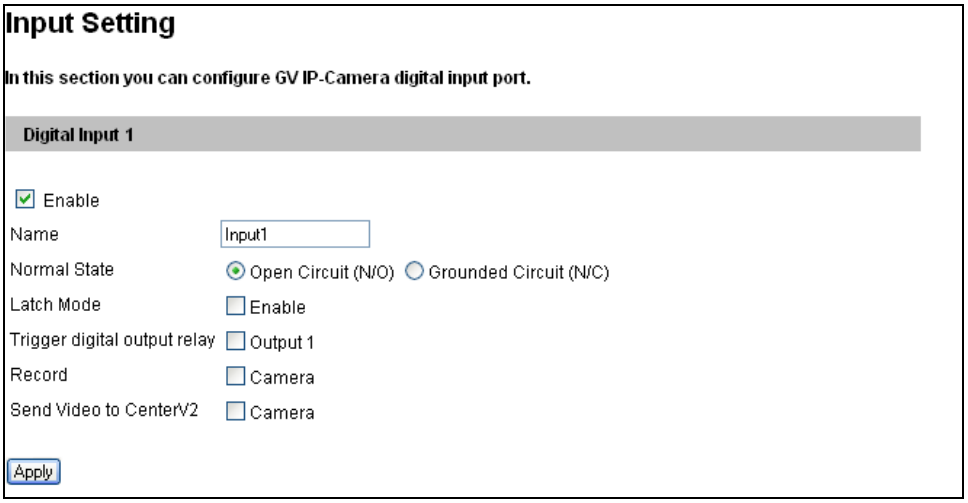


Figure 4-10

- **Normal State:** You can set the input state to trigger actions by selecting **Open Circuit (N/O)** or **Grounded Circuit (N/C)**.
- **Latch Mode:** Enable this option to have a momentary output alarm.
- **Trigger digital output relay:** When this option is enabled, the output will be triggered once the input is activated.
- **Record:** Enable this option to start recording when the input is triggered.
- **Send Video to Center V2:** Enable this option to send the images to Center V2 when the input is triggered.

Note: Triggering the output, recording the images and sending video to Center V2 are enabled only after you start **Input** monitoring manually or by schedule. To configure the input monitoring, see *4.4 Monitoring*.

4.2.2 Output Settings

Select **Enable** to start the output device. Choose the output signal that best suits the device you are using: N/O (Open Circuit), N/C (Grounded Circuit), N/O Toggle, N/C Toggle, N/O Pulse or N/C Pulse. For **Toggle** output type, the output continues to be triggered until a new input trigger ends the output. For **Pulse** output type, the output is triggered for the amount of time you specify in the Trigger Pulse Mode for x Seconds field.

[Alarm Settings] You can choose to automatically trigger the digital output under these conditions: tampering alarm, disk write error (Rec Error) and hard disk full (HD Full).

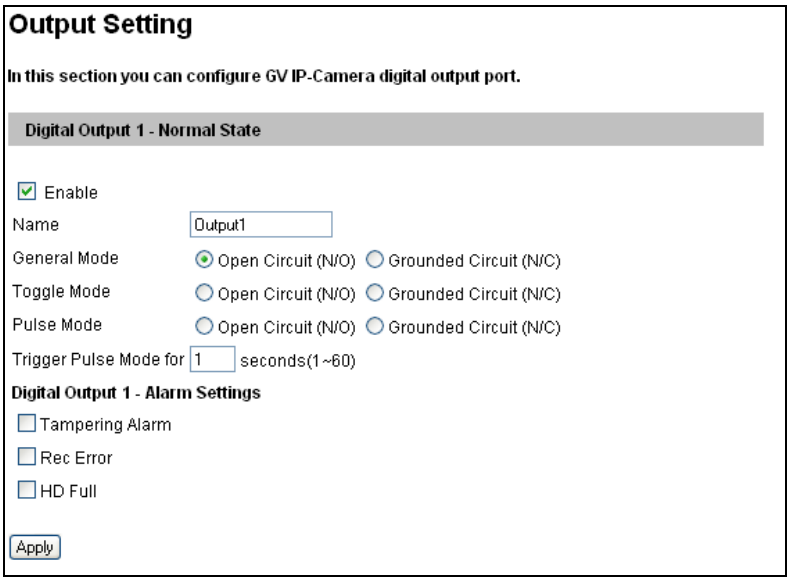


Figure 4-11

4.3 Events & Alerts

The Administrator can set up the following alert methods to receive notifications when motion is detected or I/O devices are triggered:

1. Send a captured still image by e-mail or FTP.
2. Notify Center Monitoring Station, Center V2, VSM or GV-GIS, by video or text alerts.

To activate the above alert methods, you must set the following functions in advance:

- Motion Detection (See *4.1.2 Motion Detection*)
- Input Setting (See *4.2.1 Input Settings*)
- For e-mail and FTP alerts, it is required to start monitoring (See *4.4 Monitoring*).

4.3.1 E-mail

After a trigger event, the camera can send an e-mail to a remote user containing a captured still image.

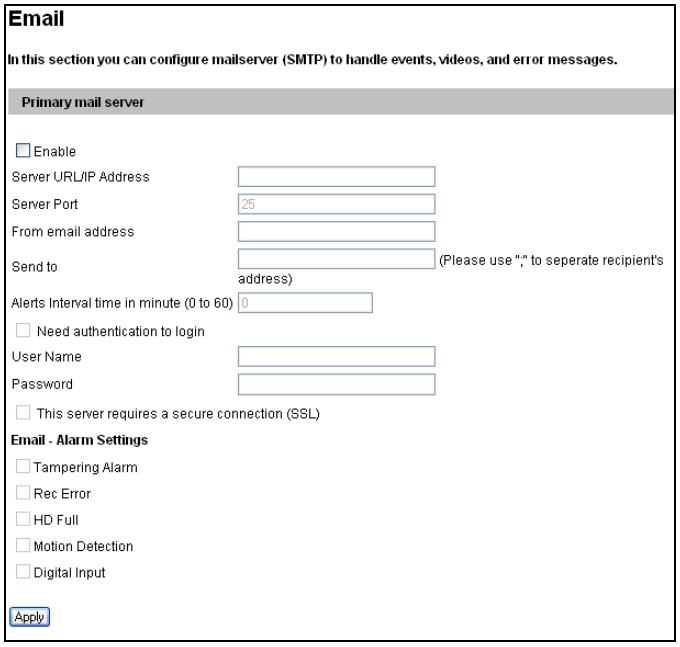


Figure 4-12

[Enable] Select to enable the e-mail function.

- **Sever URL/IP Address:** Type the SMTP Server's URL address or IP address.
- **Server Port:** Type the SMTP Server's port number. Or keep the default value 25.
- **From email address:** Type the sender's e-mail address.
- **Send to:** Type the e-mail address(s) you want to send alerts to.
- **Alerts Interval Time:** Specify the interval between e-mail alerts. The interval can be between 0 and 60 minutes. The option is useful for frequent event occurrence. Any event triggers during the interval period will be ignored.

[Need authentication to login] If the SMTP Server needs authentication, select this option and type a valid username and password to log in the SMTP server.

[This server requires a secure connection] If the SMTP Servers needs a secure connection (SSL), select this option.

[Email-Alarm Settings] You can choose to automatically send an e-mail alert under these conditions: motion detection, digital input triggered, tampering alarm, disk write error (Rec Error) and hard disk full (HD Full).

Important: To send e-mail alert upon motions, be sure to set up the detection area on the Motion Detection page.

For settings related to sending e-mail alerts, see *4.1.2 Motion Detection*, *4.2.2 Output Settings* and *4.4 Monitoring*.

4.3.2 FTP

You can also send the captured still image to a remote FTP server for alerts.

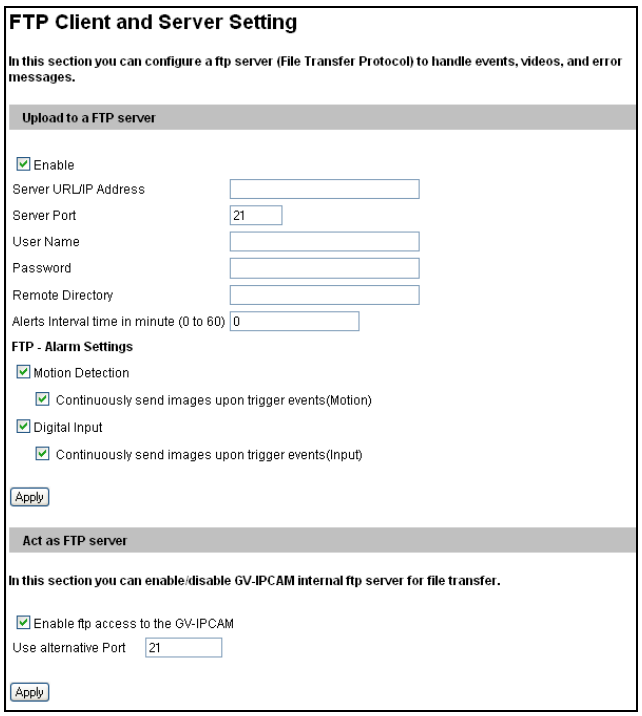

FTP Client and Server Setting
In this section you can configure a ftp server (File Transfer Protocol) to handle events, videos, and error messages.
Upload to a FTP server
Enable
Server URL/IP Address
Server Port
21
User Name
Password
Remote Directory
Alerts Interval time in minute (0 to 60)
0
FTP - Alarm Settings
Motion Detection
Continuously send images upon trigger events(Motion)
Digital Input
Continuously send images upon trigger events(Input)
Apply
Act as FTP server
In this section you can enable/disable GV-IPCAM internal ftp server for file transfer.
Enable ftp access to the GV-IPCAM
Use alternative Port
21
Apply

Figure 4-13

[Enable] Select to enable the FTP function.

- **Server URL/IP Address:** Type the URL address or IP address of the FTP Server.
- **Server Port:** Type the port number of the FTP Server. Or keep the default value 21.
- **User Name:** Type a valid user name to log into the FTP Server.
- **Password:** Type a valid password to log into the FTP Server.
- **Remote Directory:** Type the name of the storage folder on the FTP Server.
- **Alerts Interval time in minute:** Specify the interval between FTP alerts. The interval can be between 0 and 60 minutes. The option is useful for frequent event occurrence. Any event triggers during the interval period will be ignored.

[FTP-Alarm Settings]

- **Motion Detection:** Once motion is detected on the camera, a still image will be sent to the FTP Server.
  - **Continuously send images upon trigger events (Motion):** A sequence of snapshots is uploaded to the FTP Server when motion is detected on the camera.
- **Digital Input:** When the input is triggered, a still image will be sent to the FTP Server.
  - **Continuously send images upon trigger events (Input):** A sequence of snapshots is uploaded to the FTP Server when the input is triggered.

Important: To send FTP alert upon motions, be sure to set up the detection area on the Motion Detection page.

[Act as FTP Server]

- **Enable FTP access to GV-IPCAM:** The camera acts as an FTP server, enabling users to download AVI files. The memory card must be inserted for the camera to act as an FTP server.
- **Use alternative port:** The default port is set to 21.

To access the internal FTP server through a web browser, type the IP address or the domain name of the camera in your browser like this:
ftp://192.168.0.10

When you are prompted for Username and Password, type the default value **ftpuser** in both fields. Then you should find the AVI files recorded after trigger events.

To change login information of the internal FTP server, see *4.8.4 User Account*. For the related settings to send FTP alerts, see *4.1.2 Motion Detection*, *4.2.1 Input Settings* and *4.4 Monitoring*.

4.3.3 Center V2

After a motion or an I/O triggered event, the central monitoring station Center V2 can be notified by live videos and text alerts. For the live monitoring through Center V2, you must already have a subscriber account on Center V2. The camera can connect with up to two Center V2.

Important: To notify the Center V2 Server upon motions, be sure to set up the detection area on the Motion Detection page.

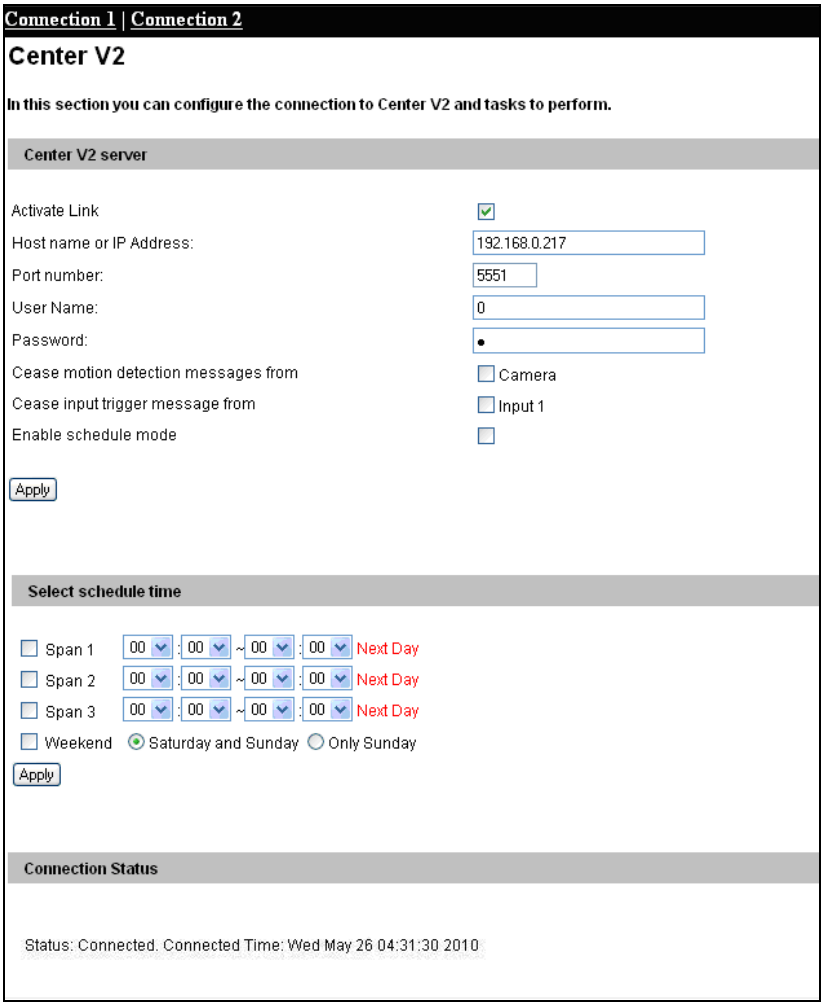


Figure 4-14

To enable the Center V2 connection:

1. **Activate Link:** Enable the monitoring through Center V2.
2. **Host Name or IP Address:** Type the host name or IP address of Center V2.
3. **Port Number:** Match the port to **Port 2** on Center V2. Or keep the default value 5551. For details, see *8.1 Center V2.*
4. **User Name:** Type a valid user name to log into Center V2.
5. **Password:** Type a valid password to log into Center V2.
6. Click **Apply.** The Connection Status should display “Connected” and the connected time.
7. To establish the connection to the second Center V2, click the **Connection 2** tab and repeat the above steps for setup.

These options can also be found on this Center V2 setting page:

- **Cease motion detection messages from:** Stops notifying Center V2 of motion-triggered events.
- **Cease input trigger messages from:** Stops notifying Center V2 of input-triggered events.
- **Enable schedule mode:** Starts the monitoring through Center V2 based on the schedule you set in the **Select Schedule Time** section. Refer to *4.5 Recording Schedule* for the same settings.

For related settings to activate the monitoring through Center V2, see *4.1.2 Motion Detection*, *4.2.1 Input Settings*, and *8.1 Center V2.*

4.3.4 VSM

After a motion detection or an I/O triggered event, the central monitoring station VSM can get notified by text alerts. For the live monitoring through VSM, you must already have a subscriber account on VSM. The camera can be connected with up to two VSM.

Important: To notify the VSM upon motions, be sure to set up the detection area on the Motion Detection page.

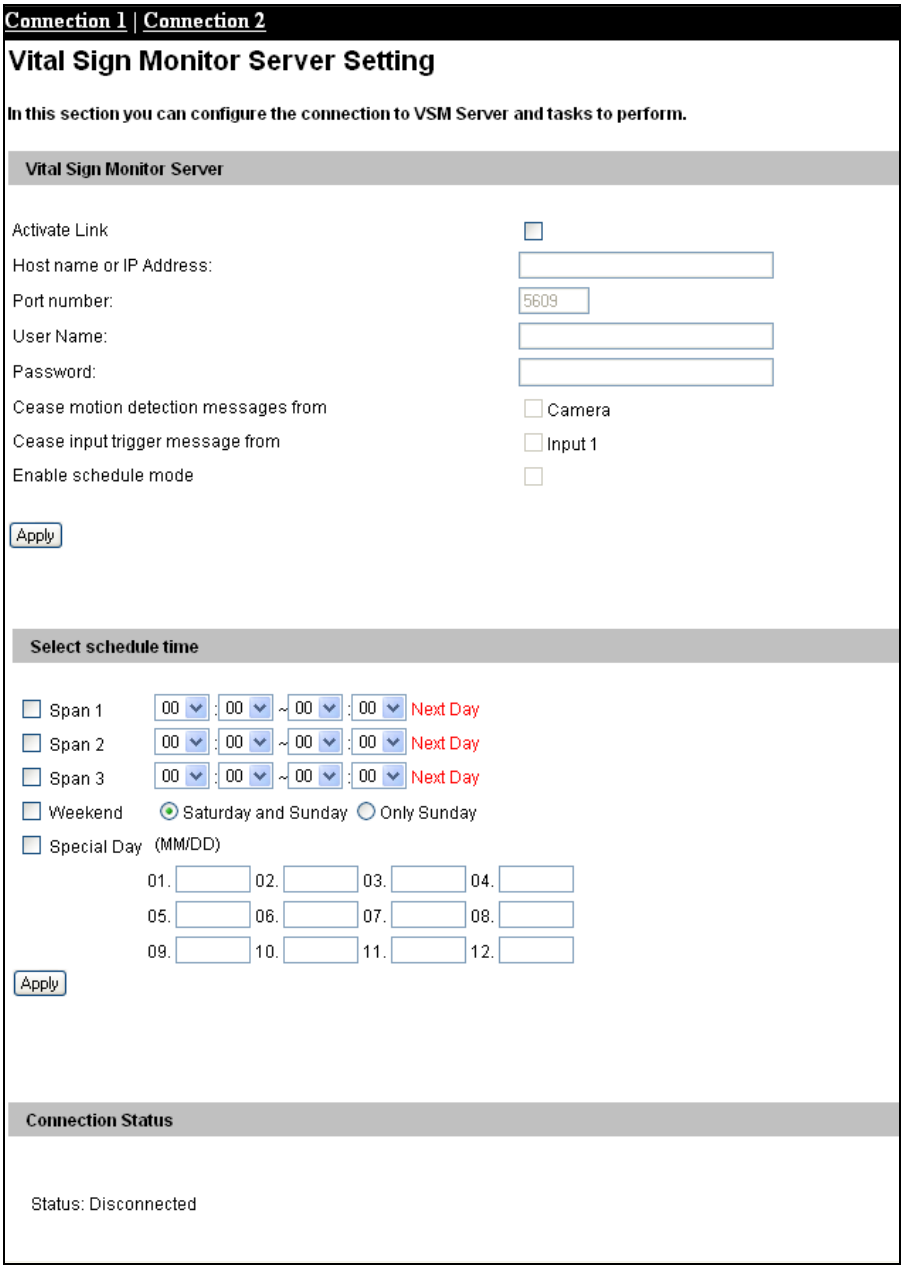


Figure 4-15

To enable the VSM connection:

1. **Activate Link:** Enable the monitoring through VSM.
2. **Host Name or IP Address:** Type the host name or IP address of VSM.
3. **Port Number:** Match the port to **Port 2** on VSM. Or keep the default value 5609. For details, see *8.2 VSM.*
4. **User Name:** Type a valid user name to log into VSM.
5. **Password:** Type a valid password to log into VSM.
6. Click **Apply**. The Connection Status should display “Connected” and connected time.
7. To establish the connection to the second VSM, click the **Connection 2** tab and repeat the above steps for setup.

These options you can also find on this VSM setting page:

- **Cease motion detection messages from:** Stops notifying VSM of motion-triggered events.
- **Cease input trigger messages from:** Stops notifying VSM of input-triggered events.
- **Enable schedule mode:** Starts the monitoring through VSM based on the schedule you set in the **Select Schedule Time** section. Refer to *4.5 Recording Schedule* for the same settings.

For related settings to activate the monitoring through VSM, see *4.1.2 Motion Detection*, *4.2.1 Input Settings,* and *8.2 VSM*.

4.3.5 Backup Center

The connection to the GV-Backup Center allows you to back up another copy of recordings and system log to the GV-Backup Center on an offsite location while the camera is saving these data to the memory card. The GV-Backup Center provides a PC-based storage and backup solution. For details on the GV-Backup Center, see *GV-Backup Center User's Manual*.

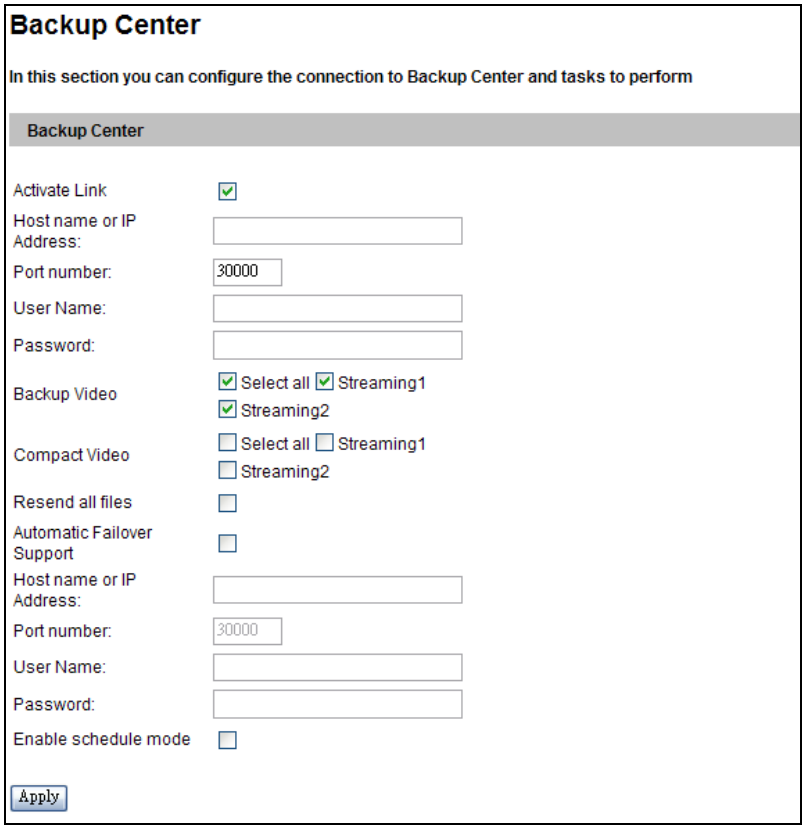


Figure 4-16

To enable connection to Backup Center:

1. **Activate Link:** Enable the connection to the Backup Center.
2. **Host Name or IP Address:** Type the host name or IP address of the Backup Center.
3. **Port Number:** Match the communication port on the Backup Center. Or keep the default value 30000.
4. **User Name:** Type a valid user name to log into the Backup Center.
5. **Password:** Type a valid password to log into the Backup Center.
6. **Backup Video:** Select the streams to back up their recordings to the Backup Center.

7. **Compact Video:** Select the streams to only back up their Key Frames to the Backup Center, instead of full recordings. This option is useful to save the backup time.
8. **Resend all files:** Select this option to send all the recorded files that have been received by the Backup Center again.
9. **Enable Schedule Mode:** Enable the Backup Center connection on the schedule you set in the **Select Schedule Time** section. Refer to *4.5 Recording Schedule* for the same settings.
10. Click **Apply**. The Connection Status should display “Connected” and connected time.

If the Backup Center has a failover server to provide uninterrupted backup services in case the primary Backup Center fails, you can enable the automatic failover support.

1. **Automatic Failover Support:** Enable automatic connection to a secondary failover server once the connection between camera and the primary Backup Center is interrupted.
2. **Host Name or IP Address:** Type the host name or IP address of the failover center.
3. **Port Number:** Match the communication port on the failover server. Or keep the default value 30000.
4. **User Name:** Type a valid user name to log into the failover server.
5. **Password:** Type a valid password to log into the failover server.
6. Click **Apply**.

4.3.6 Video Gateway / Recording Server

The GV-Video Gateway / GV-Recording Server is a video streaming server designed for large-scale video surveillance deployments. The GV-Video Gateway / GV-Recording Server (with recording capability) can receive up to 128 channels from various IP video devices, and distribute up to 300 channels to its clients. With the GV-Video Gateway / GV-Recording Server, the desired frame rate can be ensured while the CPU loading and bandwidth usage of the IP video devices are significantly reduced.

The fisheye camera can be connected with up to two GV-Video Gateway / GV-Recording Server. To send the video images to the GV-Video Gateway or GV-Recording Server, follow the steps below.

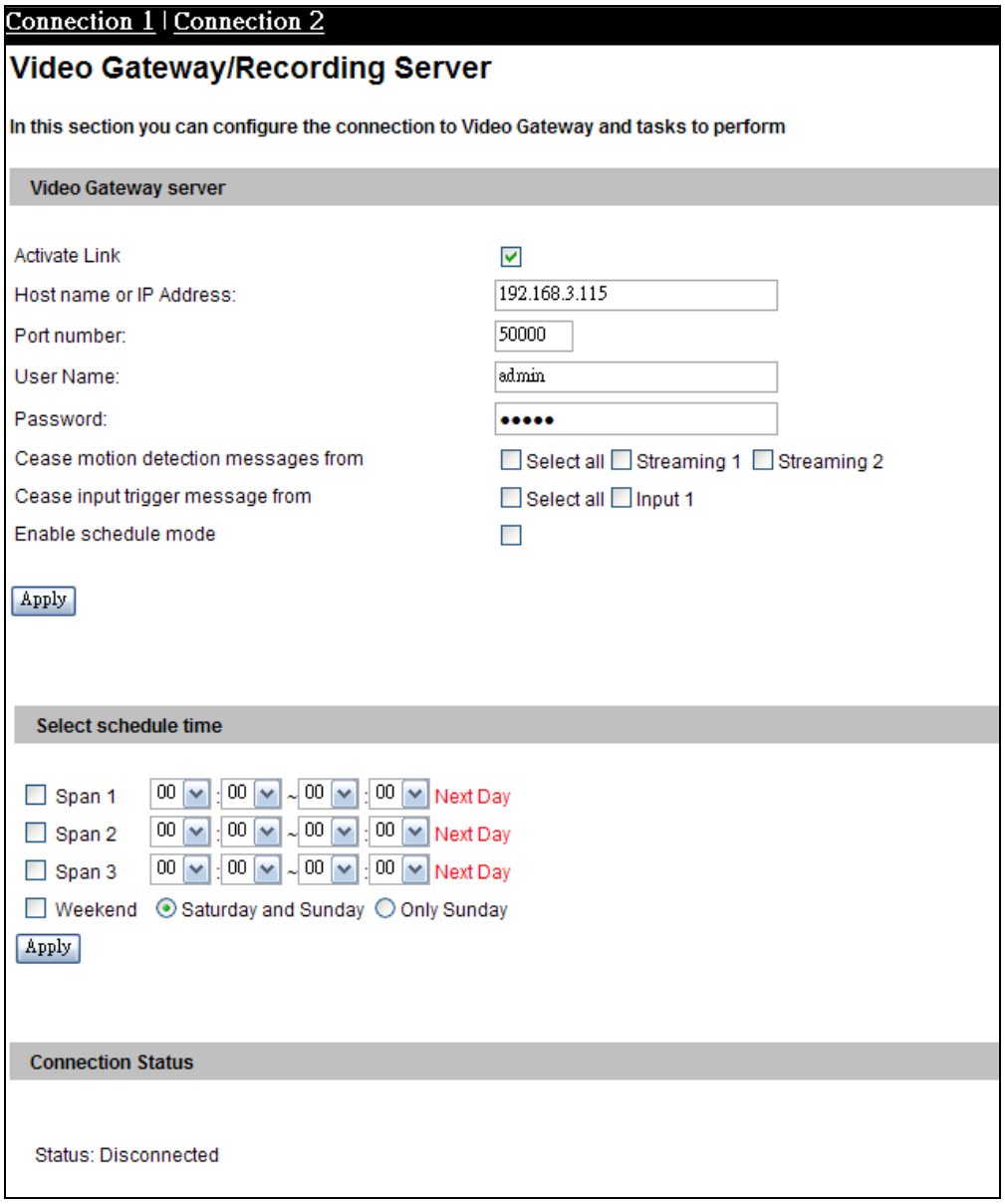

Connection 1 | Connection 2
Video Gateway/Recording Server
In this section you can configure the connection to Video Gateway and tasks to perform
Video Gateway server
Activate Link
Host name or IP Address:
192.168.3.115
Port number:
50000
User Name:
admin
Password:
Cease motion detection messages from
Select all Streaming 1 Streaming 2
Cease input trigger message from
Select all Input 1
Enable schedule mode
Apply
Select schedule time
Span 1 00 : 00 ~ 00 : 00 Next Day
Span 2 00 : 00 ~ 00 : 00 Next Day
Span 3 00 : 00 ~ 00 : 00 Next Day
Weekend Saturday and Sunday Only Sunday
Apply
Connection Status
Status: Disconnected

Figure 4-17

1. **Activate Link:** Enable the connection to the GV-Video Gateway / GV-Recording Server.
2. **Host Name or IP Address:** Type the host name or IP address of the GV-Video Gateway / GV-Recording Server.
3. **Port Number:** Match the communication port on the GV-Video Gateway / GV-Recording Server or keep the default value 50000.
4. **User Name:** Type a valid user name to log into the GV-Video Gateway / GV-Recording Server.
5. **Password:** Type a valid password to log into the GV-Video Gateway / GV-Recording Server.
6. **Enable schedule mode:** Enable the GV-Video Gateway / GV-Recording Server connection on the schedule you set in the **Select Schedule Time** section. Refer to *4.5 Recording Schedule* for the same settings.
7. Click **Apply**. The Connection Status should display “Connected” and the connected time.
8. To establish the connection to the second GV-Video Gateway / GV-Recording Server, click the **Connection 2** tab and repeat the above steps for setup.

Note: The three functions, **Cease motion detection messages from, Cease input trigger message from** and **Cease all messages from**, are not functional.

4.3.7 ViewLog Server

The ViewLog Server is designed for remote playback function. This server allows you to remotely access the recorded files saved in the camera and play back video with the player ViewLog.

Select **Enable** to activate the built-in server. Keep the default port **5552** or modify it if necessary. For details on the remote playback, see *5.2.2 Playback over Network*.

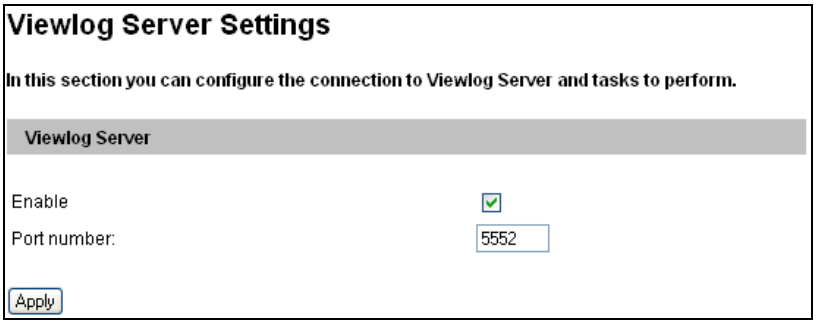


Figure 4-18

4.3.8 RTSP

The RTSP Server enables RTSP protocol for video streaming.

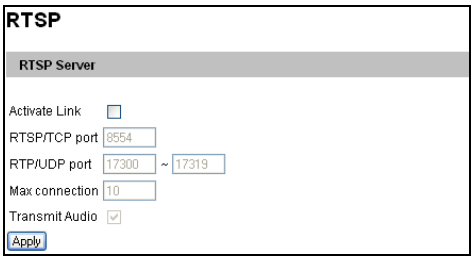


Figure 4-19

- **Activate Link:** Enable the RTSP protocol.
- **RTSP/TCP Port:** Keep the default value 8554, or modify it if necessary.
- **RTP/UDP Port:** Keep the default range from 17300 to 17319, or modify it if necessary. The number of ports for use is limited to 20.
- **Max Connection:** Set the maximum number of connections to the camera.
- **Transmit Audio:** Turns audio streaming on or off.

For details on the RTSP command, see *RTSP Protocol Support* in Appendix B.

4.4 Monitoring

You can start recording manually, by schedule or by input trigger.

Note: See **Note for Recording** at the beginning of the manual.

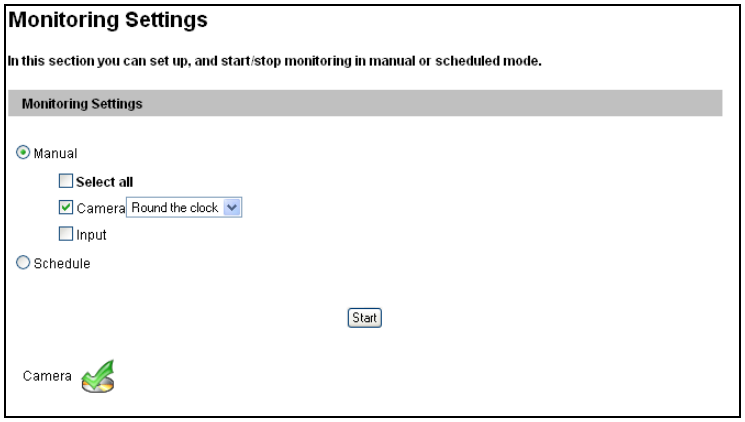


Figure 4-20

[Manual] Manually activates motion detection and I/O monitoring. Select one of the following options and then click the **Start** button.

- **Select all:** Manually starts both motion detection and I/O monitoring.
- **Camera x:** Manually starts recording. Select the desired recording mode for recording.
- **Input:** Manually starts I/O monitoring. When the sensor input is triggered, the camera and output will also be activated for recording and alerting. For input settings, see *4.2.1 Input Settings.*

[Schedule] The system starts recording and input monitoring based on the schedule you set. For schedule settings, see *4.5 Recording Schedule*.

[Camera Status Icon]

: On standby

: Enabled for motion detection and input trigger

: Recording is on.

4.5 Recording Schedule

The schedule is provided to activate recording and I/O monitoring on a specific time each day.

4.5.1 Recording Schedule Settings

You can set up the schedule for recording.

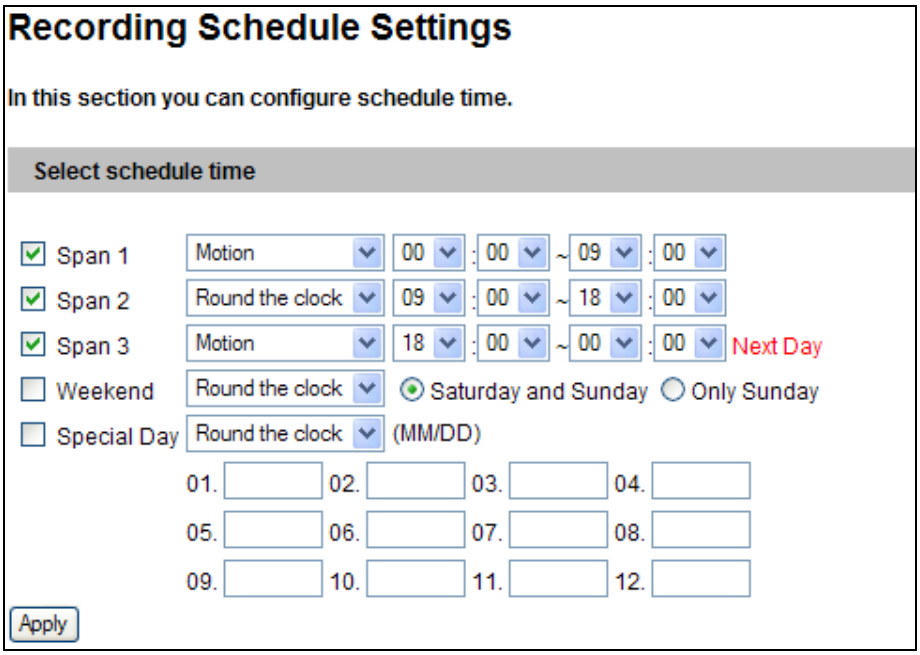


Figure 4-21

- **Span 1- Span 3:** Set a different recording mode for each time span during the day. Each day can be divided into 3 time spans, shown as Span 1, Span2, and Span 3. The time span settings will apply to Monday through Sunday.
- **Weekend:** Enable this option to start monitoring all day on the weekend and select a recording mode to be used. Define whether your weekend includes **Saturday and Sunday** or **Only Sunday**.
- **Special Day:** Set the recording mode on a specified day.

4.5.2 I/O Monitoring Settings

You can set the schedule for I/O monitoring to start.

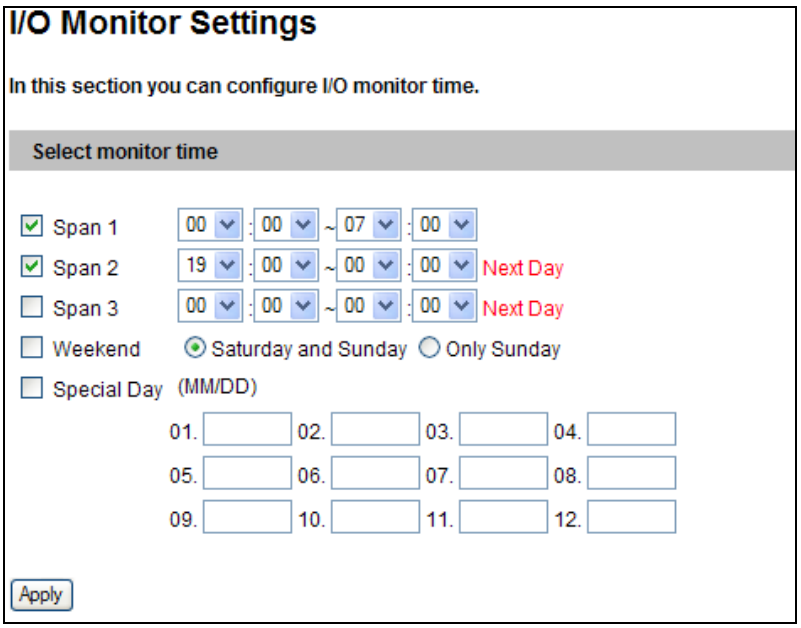

I/O Monitor Settings
In this section you can configure I/O monitor time.
Select monitor time
Span 1
00 : 00 ~ 07 : 00
Span 2
19 : 00 ~ 00 : 00 Next Day
Span 3
00 : 00 ~ 00 : 00 Next Day
Weekend
Saturday and Sunday
Only Sunday
Special Day (MM/DD)
01. 02. 03. 04.
05. 06. 07. 08.
09. 10. 11. 12.
Apply

Figure 4-22

- **Span 1-3:** Set different time spans during the day to enable I/O monitoring. Each day can be divided into 3 time spans, shown as Span 1, Span 2, and Span 3. The time span settings will work from Monday through Sunday.
- **Weekend:** Enable this option to start I/O monitoring all day on the weekend and select whether your weekend includes **Saturday and Sunday** or **Only Sunday**.
- **Special Day:** Enable I/O monitoring on a specified day.

Note: In Recording Schedule and I/O Monitoring Schedule, if the settings for Special Day conflict with those for Span 1-3 or Weekend, the Special Day settings will get priority.

4.6 Remote ViewLog

With the Remote ViewLog function, you can play back the files recorded at the camera over TCP/IP network.

For first-time users, you need to install the Remote ViewLog program from the Software DVD to the local computer. For remote access to the camera, the **ViewLog Server** built in the unit must be enabled. See *4.3.7 ViewLog Server*.

For details on connecting to the camera for playback, see *5.2.2 Playback over Network*.

4.7 Network

The Network section includes some basic but important network configurations that enable the camera to be connected to a TCP/IP network.

4.7.1 LAN

According to your network environment, select among Static IP, DHCP and PPPoE.

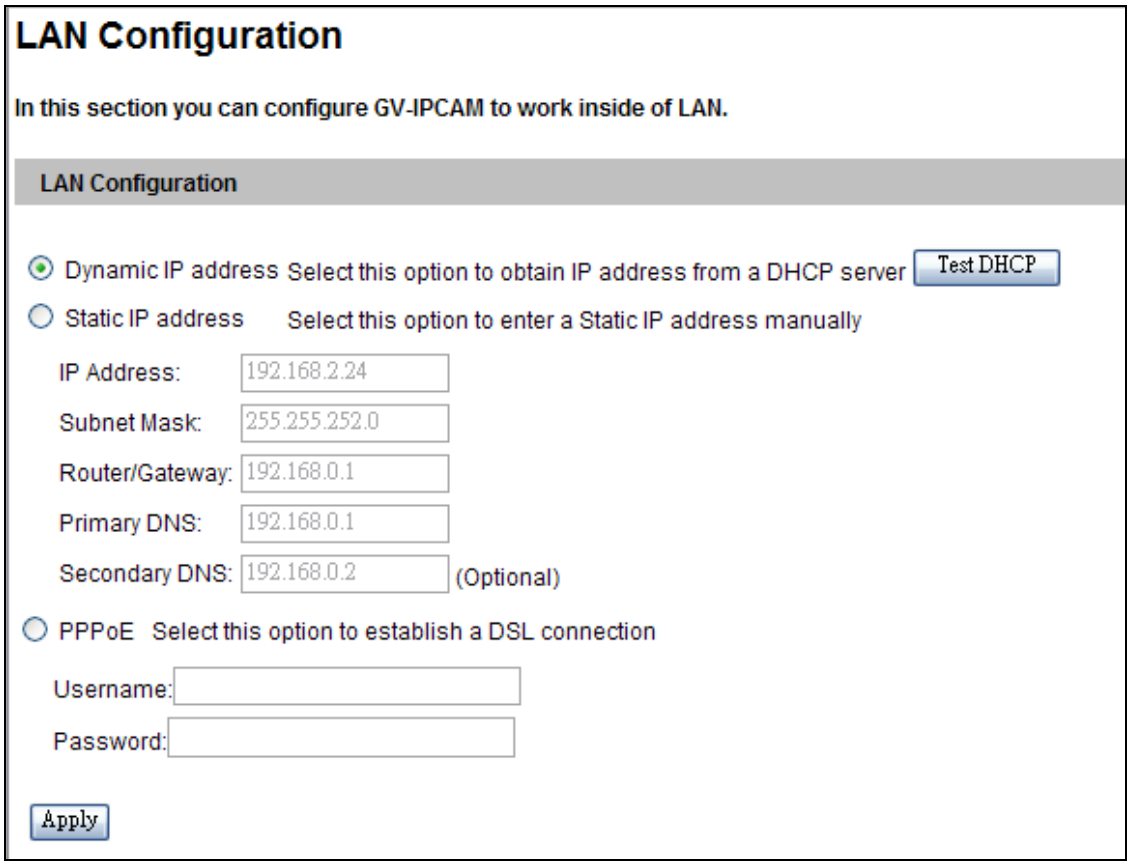

LAN Configuration
In this section you can configure GV-IPCAM to work inside of LAN.
LAN Configuration
Dynamic IP address Select this option to obtain IP address from a DHCP server
Test DHCP
Static IP address Select this option to enter a Static IP address manually
IP Address: 192.168.2.24
Subnet Mask: 255.255.252.0
Router/Gateway: 192.168.0.1
Primary DNS: 192.168.0.1
Secondary DNS: 192.168.0.2
(Optional)
PPPoE Select this option to establish a DSL connection
Username:
Password:
Apply

Figure 4-23

[LAN Configuration]

- **Dynamic IP address:** The network environment has a DHCP server which will automatically assign a dynamic IP address to the camera. Click the **Test DHCP** to see the currently assigned IP address or look up the address using GV-IP Device Utility.

- **Static IP address:** Assign a static IP or fixed IP to the camera. Type the camera's IP address, Subnet Mask, Router/Gateway, Primary DNS server and Secondary DNS server.

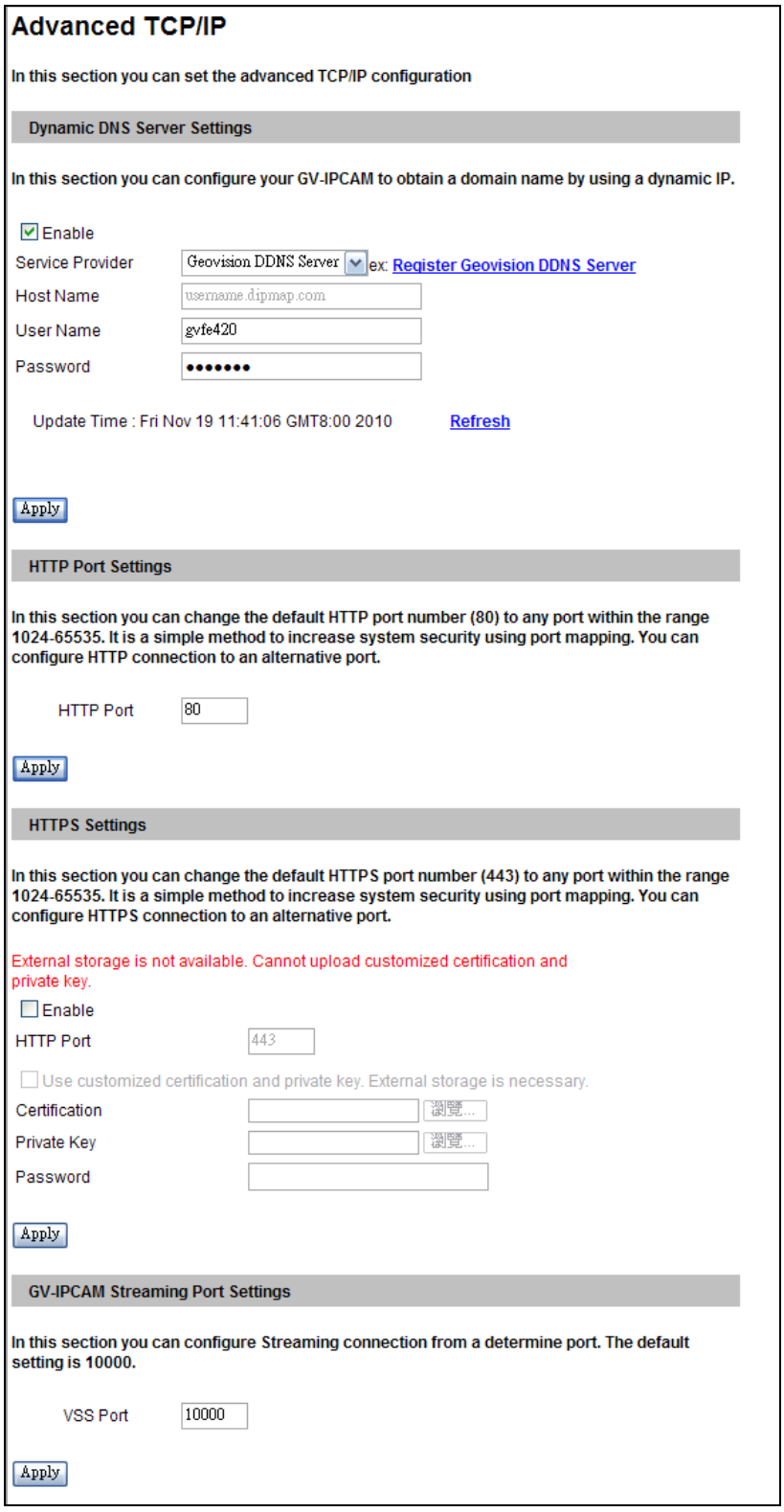
Parameters	Default
IP address	192.168.0.10
Subnet Mask	255.255.255.0
Router/Gateway	192.168.0.1
Primary DNS server	192.168.0.1
Secondary DNS server	192.168.0.2

- **PPPoE:** The network environment is xDSL connection. Type the Username and Password provided by ISP to establish the connection. If you use the xDSL connection with dynamic IP addresses, first use the DDNS function to obtain a domain name linking to the camera's changing IP address.

For details on Dynamic DNS Server Settings, *see 4.7.2 Advanced TCP/IP.*

4.7.2 Advanced TCP/IP

This section introduces the advanced TCP/IP settings, including DDNS Server, HTTP port, streaming port, UPnP and QoS.


Advanced TCP/IP
In this section you can set the advanced TCP/IP configuration
Dynamic DNS Server Settings
In this section you can configure your GV-IPCAM to obtain a domain name by using a dynamic IP.
Enable
Service Provider
Geovision DDNS Server
ex: Register Geovision DDNS Server
Host Name
username.dipmap.com
User Name
gvfe420
Password
Update Time : Fri Nov 19 11:41:06 GMT8:00 2010
Refresh
Apply
HTTP Port Settings
In this section you can change the default HTTP port number (80) to any port within the range 1024-65535. It is a simple method to increase system security using port mapping. You can configure HTTP connection to an alternative port.
HTTP Port
80
Apply
HTTPS Settings
In this section you can change the default HTTPS port number (443) to any port within the range 1024-65535. It is a simple method to increase system security using port mapping. You can configure HTTPS connection to an alternative port.
External storage is not available. Cannot upload customized certification and private key.
Enable
HTTP Port
443
Use customized certification and private key. External storage is necessary.
Certification
Private Key
Password
Apply
GV-IPCAM Streaming Port Settings
In this section you can configure Streaming connection from a determine port. The default setting is 10000.
VSS Port
10000
Apply

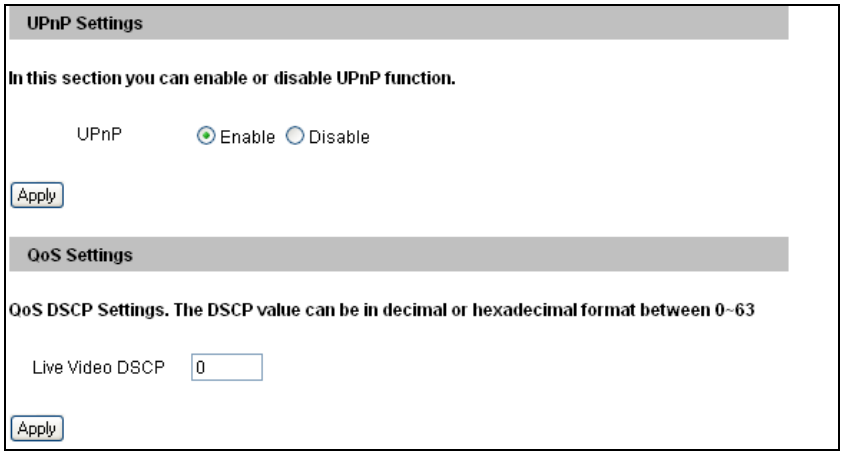


Figure 4-24

[Dynamic DNS Server Settings]

DDNS (Dynamic Domain Name System) provides a convenient way of accessing the camera when using a dynamic IP. DDNS assigns a domain name to the camera, so that the Administrator does not need to go through the trouble of checking if the IP address assigned by DHCP Server or ISP (in xDSL connection) has changed.

Before enabling the following DDNS function, the Administrator should have applied for a Host Name from the DDNS service provider's website. There are 2 providers listed in the camera: GeoVision DDNS Server and DynDNS.org.

To enable the DDNS function:

1. **Enable:** Enable the DDNS function.
2. **Service Provider:** Select the DDNS service provider you have registered with.
3. **Host Name:** Type the host name used to link to the camera. For users of GeoVision DDNS Server, it is unnecessary to fill the field because the system will detect the host name automatically.
4. **User Name:** Type the user name used to enable the service from the DDNS.
5. **Password:** Type the password used to enable the service from the DDNS.
6. Click **Apply**.

[HTTP Port Settings]

The HTTP port enables connecting the camera to the web. For security integration, the Administrator can hide the server from the general HTTP port by changing the default HTTP port of 80 to a different port number within the range of 1024 through 65535.

[HTTPS Settings]

By enabling the HTTPS settings, you can access the camera through a secure protocol. You can use your own generated Certificate and Private Key or ones verified by the SSL authority. Click **Browse** to locate the Certificate file and Private Key file, and type the password if the .pem files are protected by a password. Click **Apply**. The Web interface will be restarted automatically and you will need to log in again.

Note: Only .pem file format is supported for Certification and Private Key.

[GV-IPCAM Streaming Port Settings]

The VSS port enables connecting the camera to the GV-System. The default setting is 10000.

[UPnP Settings]

UPnP (Universal Plug & Play) is a networking architecture that provides compatibility among networking equipment, software and peripherals of the 400+ vendors that are part of the Universal Plug and Play Forum. It means that they are listed in the network devices table for the operating system (such as Windows XP) supported by this function. Enabling this function, you can connect to the camera directly by clicking on the camera listed in the network devices table.

[QoS Settings] The Quality of Service (QoS) is a bandwidth control mechanism that guarantees delay-sensitive data flows such as voice and video streams, obtain a certain amount of bandwidth to keep the streaming smooth.

To apply QoS to the fisheye camera, all network routers must support QoS and QoS must be enabled on these devices. To enable the QoS on the camera, enter a Differentiated Services Code Point (DSCP) value. This value is a field in an IP packet that enables different levels of services for the network traffic. When the video stream from the camera reaches a router, the DSCP value will tell the router what service level to be applied, e.g. the bandwidth amount. This value ranges from 0 to 63 in decimal format. The default value is 0, meaning QoS is disabled.

4.7.3 IP Filtering

The Administrator can set IP filtering to restrict access to the camera.

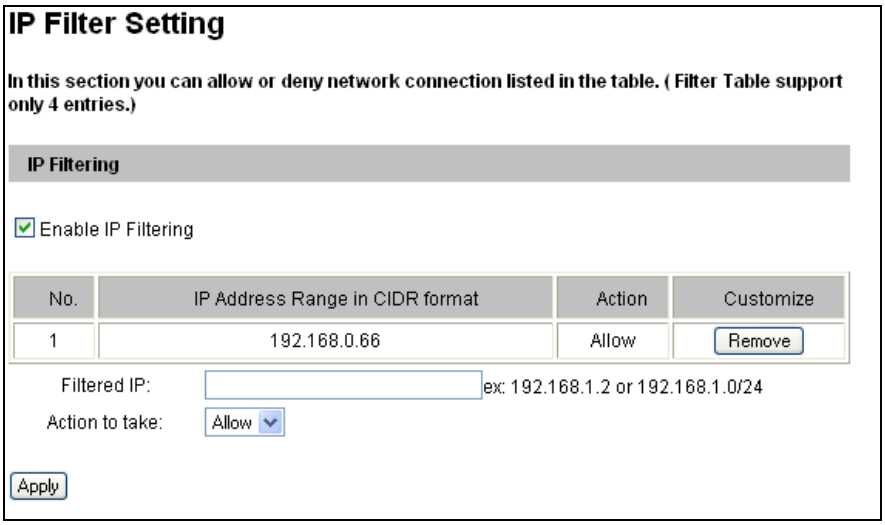


Figure 4-25

To enable the IP Filter function:

1. **Enable IP Filtering:** Enable the IP Filtering function.
2. **Filtered IP:** Type the IP address you want to restrict the access.
3. **Action to take:** Select to **Allow** or **Deny** the IP address(es) you have specified.
4. Click **Apply**.

4.7.4 SNMP Setting

The Simple Network Management Protocol (SNMP) allows you to monitor the status of the camera with SNMP network management software.

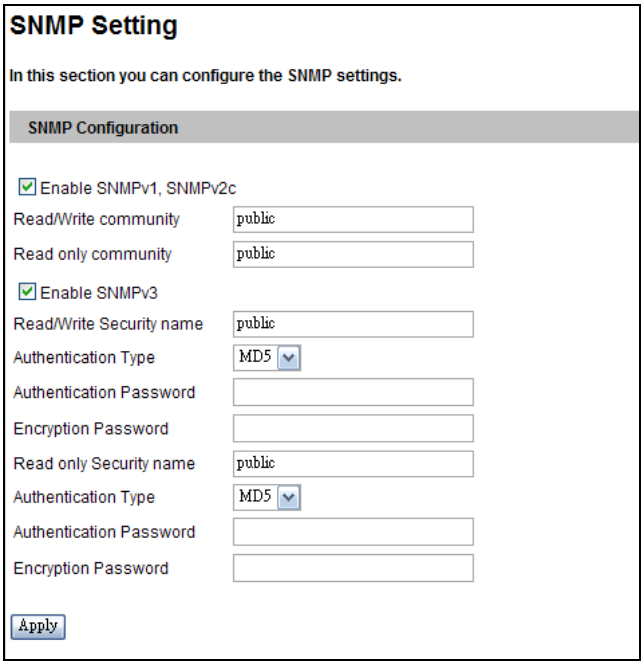


Figure 4-26

To set up the SNMP settings:

1. Select **Enable SNMPv1 SNMPv2c** to enable the function.
2. To enable access to **Read/Write community**, type a community string. This will serve as a password to allow read and write access to the camera from the SNMP software.
3. To enable **Read only community**, type a community string to allow read only access to the camera from the SNMP software.
4. For a more secured connection, select **Enable SNMPv3** to enable SNMP version 3.
5. To enable access to SNMPv3 Read/Write community, type a **Read/Write Security name**.
6. Select an **Authentication Type** to use for SNMP requests.
7. Type the **Authentication Password** and **Encryption Password**. You will need to type these passwords in the SNMP software to be able to access the camera.
8. To enable access to SNMPv3 Read only community, type a **Read only Security name** and follow steps 6 – 7.
9. Click **Apply** to save the settings.

4.8 Management

The Management section includes the settings of data and time, GPS maps, storage device and user account. Also you can view the firmware version and execute certain system operations.

4.8.1 Date and Time Settings

The date and time settings are used for date and time stamps on the image.

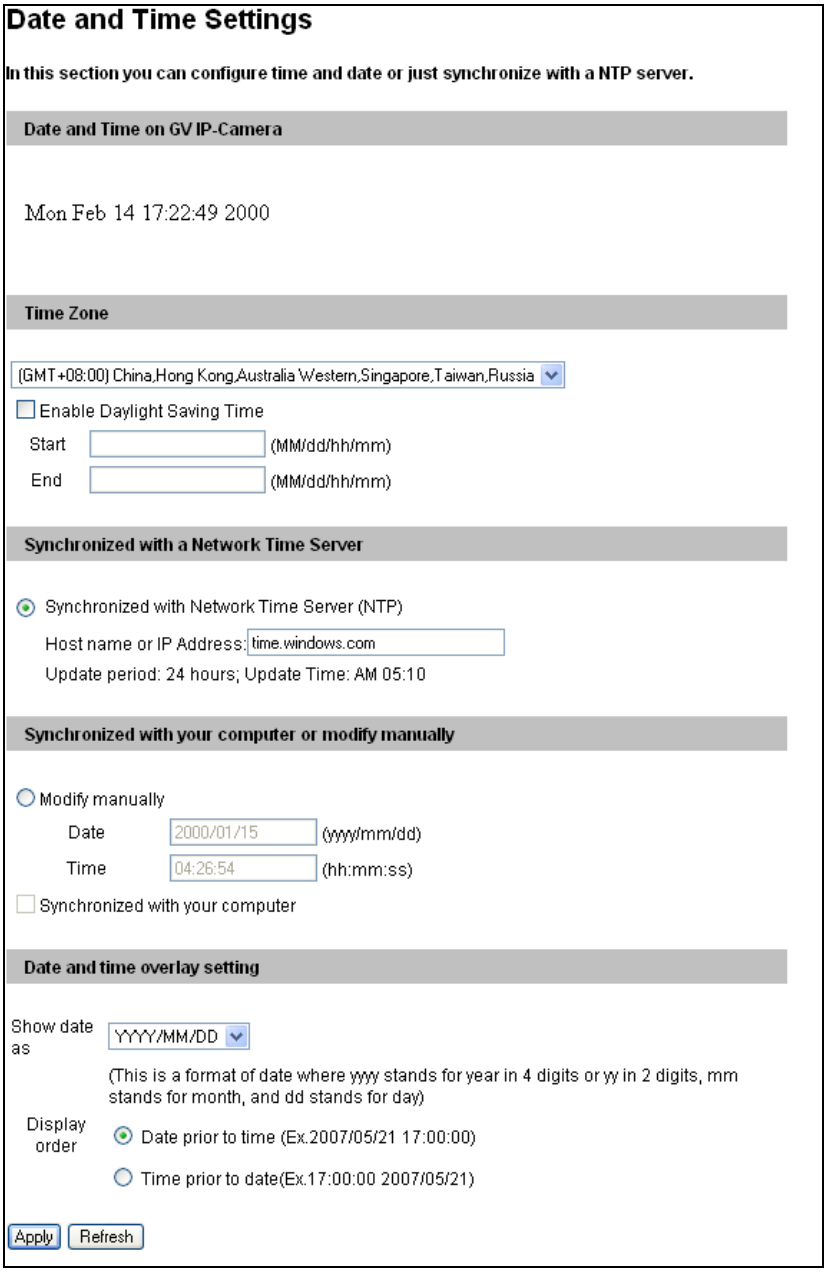

Date and Time Settings
In this section you can configure time and date or just synchronize with a NTP server.
Date and Time on GV IP-Camera
Mon Feb 14 17:22:49 2000
Time Zone
(GMT+08:00) China,Hong Kong,Australia Western,Singapore,Taiwan,Russia
Enable Daylight Saving Time
Start
(MM/dd/hh/mm)
End
(MM/dd/hh/mm)
Synchronized with a Network Time Server
Synchronized with Network Time Server (NTP)
Host name or IP Address:
time.windows.com
Update period: 24 hours; Update Time: AM 05:10
Synchronized with your computer or modify manually
Modify manually
Date
2000/01/15
(yyyy/mm/dd)
Time
04:26:54
(hh:mm:ss)
Synchronized with your computer
Date and time overlay setting
Show date as
YYYY/MM/DD
(This is a format of date where yyyy stands for year in 4 digits or yy in 2 digits, mm stands for month, and dd stands for day)
Display order
Date prior to time (Ex.2007/05/21 17:00:00)
Time prior to date(Ex.17:00:00 2007/05/21)
Apply
Refresh

Figure 4-27

[Date & Time on GV-IPCAM] Displays the current date and time on the camera.

[Time Zone] Sets the time zone for local settings. Select **Enable Daylight Saving Time** to automatically adjust the camera for daylight saving time. Type the Start Time and End Time to enable the daylight saving function. To playback, see *5.2.4 Playback of Daylight Saving Time Events*. To automatically synchronize the Daylight Saving Time with the GV-System, see *7.1.1 Customizing the Basic Settings*.

[Synchronized with a Time Server] By default, the camera uses the timeserver of time.windows.com to automatically update its internal clock every 24 hours at the Update Time you specified. You can also change the host name or IP setting to the timeserver of interest.

[Synchronized with your computer or manually] Manually changes the camera's date and time. Or, synchronize the camera's date and time with those of the local computer.

[Date and time overlay setting] Select the display format of date and time stamps on the image. For this function to work, you must also enable the **Overlaid with date stamps** and **Overlaid with time stamps** options in Figure 4-2.

4.8.2 GPS Maps Settings

The Maps Settings allows you to see the location of your camera on Google maps, without a GPS device.

To see the location of your camera on maps:

1. It is required to sign up for a Google Maps API key before using the Google Maps. Click **Link to the Google Maps API**.

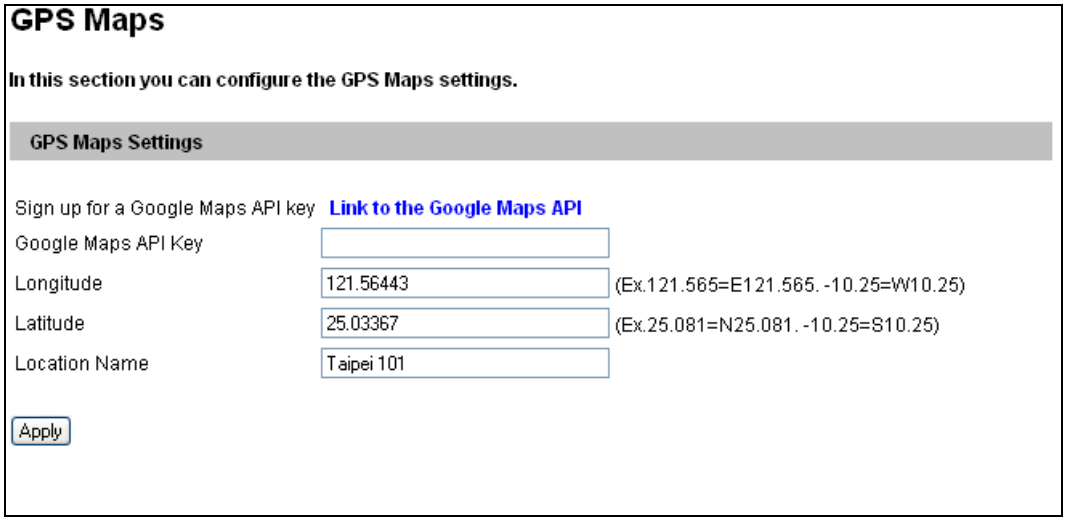


Figure 4-28

2. Enter the registered Maps API Key, the longitude and latitude of your camera, and location name. Click **Apply** to enable this function.
3. Open the control panel of the Live View window.

Figure 4-29

4. Click **Open**. A warning message appears.

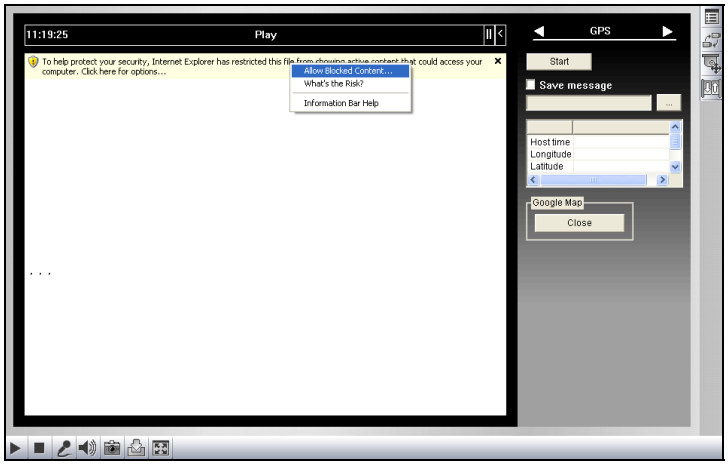


Figure 4-30

5. Right-click the warning message and select **Allow Blocked Content**. The map will be displayed. The icon indicates the location of your camera. At the upper right corner you have options to view different map formats, such as Satellite and Hybrid.

Figure 4-31

4.8.3 Storage Settings

Based on Linux ext3 file system, the camera supports memory cards for video and audio recordings. You need to format the memory card by using the following Storage Settings. After being formatted, the memory card will be ready to use by Linux OS of the camera.

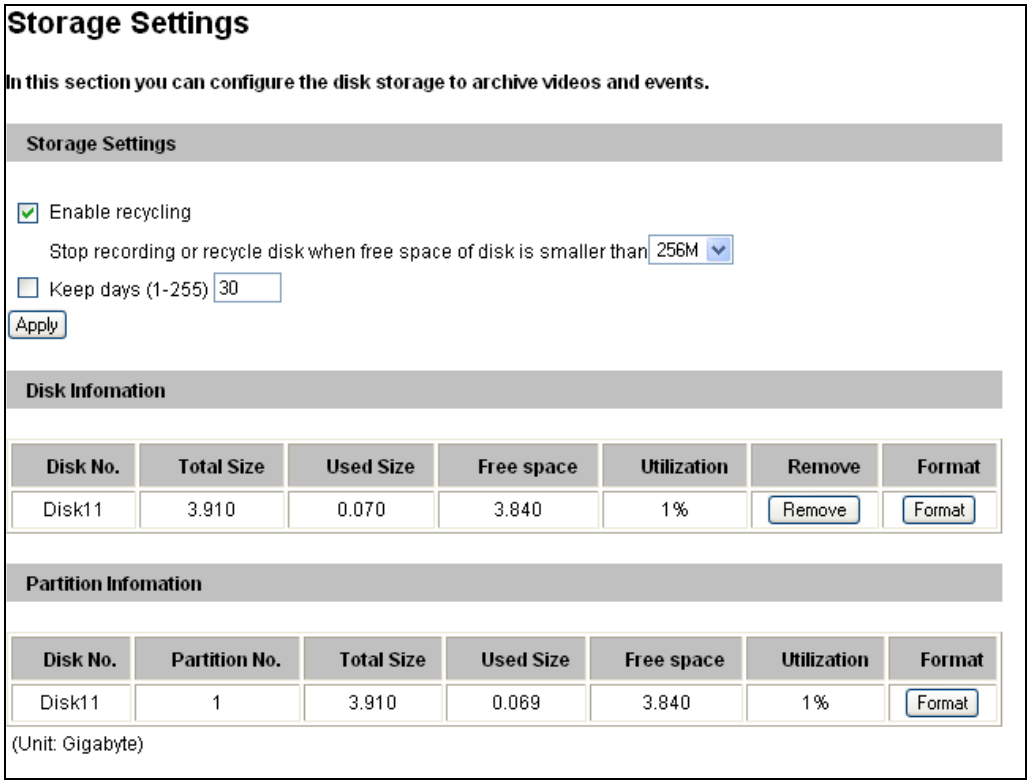

Storage Settings
In this section you can configure the disk storage to archive videos and events.
Storage Settings
Enable recycling
Stop recording or recycle disk when free space of disk is smaller than 256M
Keep days (1-255) 30
Apply
Disk Infomation
Disk No. Total Size Used Size Free space Utilization Remove Format
Disk11 3.910 0.070 3.840 1% Remove Format
Partition Infomation
Disk No. Partition No. Total Size Used Size Free space Utilization Format
Disk11 1 3.910 0.069 3.840 1% Format
(Unit: Gigabyte)

Figure 4-32

[Storage Settings]

If the **Enable recycling** option is selected, when the space of the storage device is lower than the specified space, the system will either write the data to another device or overwrite the oldest recorded files.

If the **Enable recycling** option is not selected, the system will stop recording when the specified space is reached.

- **Keep days (1-255):** Specify the number of days to keep the files from 1 day to 255 days. When both **Keep days** and **Enable recycling** are selected, the system applies whichever condition comes first. For example, if the specified smallest amount of storage space comes earlier than the designated keep days, then recycle is applied first.

[Disk Information]

This section shows the details of the attached storage devices.

[Partition Information]

This section shows the partition details of the attached storage devices.

To add a memory card:

1. Insert the memory card to the camera.
2. Click the **Format** button.
3. After the format is complete, the partition information will display. The maximum space for one partition is 200 GB.

To remove a memory card:

1. Click the **Remove** button.
2. When you are prompted to confirm the action, click **Yes**. The page will be refreshed and the partition information will be cleaned.
3. Remove the memory card from the camera.

Note:

1. If **Enable Recycle** is selected, the available space of the storage device must be higher than the space you specified at the **Stop recording or recycle disk when free space of disk is smaller than x** option. Otherwise no video will be recoded.
2. The recording data may be lost if you remove the storage device during recording.
3. If you do not remove the storage device properly, the data cannot be read in another computer. In this case, re-plug the storage device back to the camera. The system will repair the data automatically. When the system is repairing the data, the **Remove** field will display “Repairing”.

4.8.4 User Account

You can change the login name and password of Administrator, Guest and FTP Server User.

- The default Administrator login name and password are **admin**.
- The default Guest login name and password are **guest**. To allow a Guest user to log in without entering name and password, select **Disable authentication for guest account**.
- The default FTP Server login name and password are **ftpuser**.

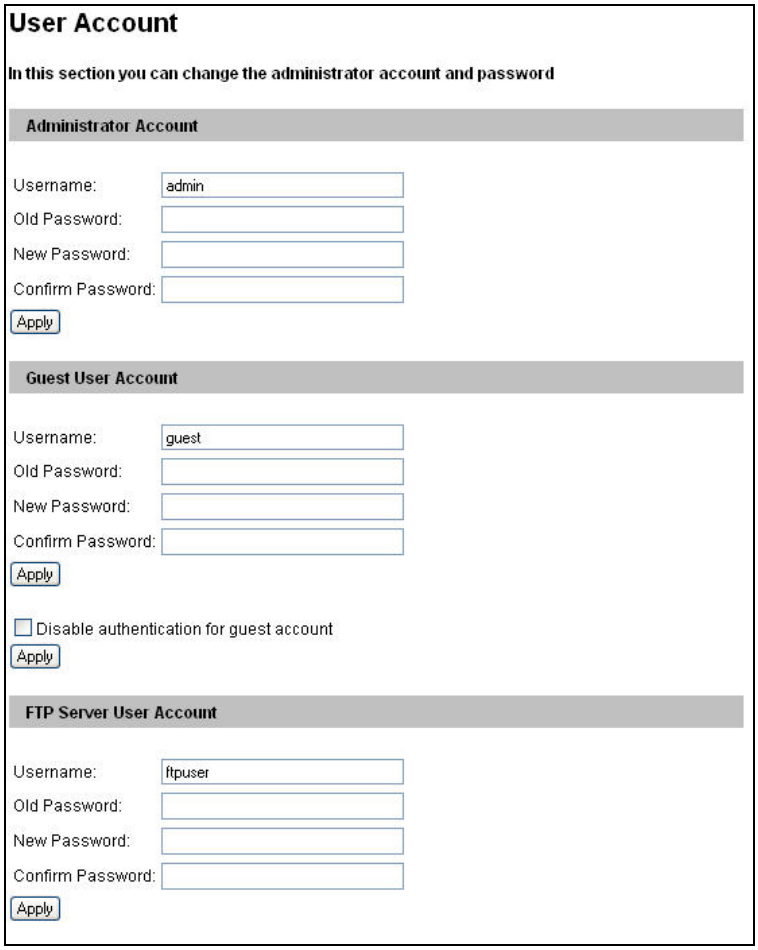


Figure 4-33

4.8.5 Log Information

The log information contains dump data that is used by service personnel for analyzing problems.

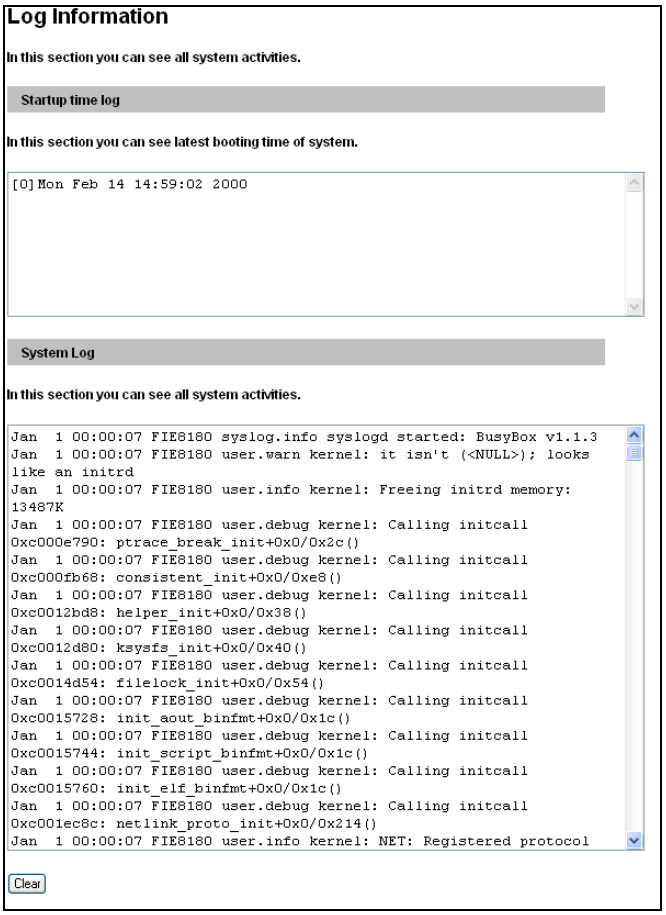

Log Information
In this section you can see all system activities.
Startup time log
In this section you can see latest booting time of system.
[0]Mon Feb 14 14:59:02 2000
System Log
In this section you can see all system activities.
Jan 1 00:00:07 FIE8180 syslog.info syslogd started: BusyBox v1.1.3
Jan 1 00:00:07 FIE8180 user.warn kernel: it isn't (<NULL>); looks like an initrd
Jan 1 00:00:07 FIE8180 user.info kernel: Freeing initrd memory: 13487K
Jan 1 00:00:07 FIE8180 user.debug kernel: Calling initcall 0xc000e790: ptrace_break_init+0x0/0x2c()
Jan 1 00:00:07 FIE8180 user.debug kernel: Calling initcall 0xc000fb68: consistent_init+0x0/0xe8()
Jan 1 00:00:07 FIE8180 user.debug kernel: Calling initcall 0xc0012bd8: helper_init+0x0/0x38()
Jan 1 00:00:07 FIE8180 user.debug kernel: Calling initcall 0xc0012d80: ksysfs_init+0x0/0x40()
Jan 1 00:00:07 FIE8180 user.debug kernel: Calling initcall 0xc0014d54: filelock_init+0x0/0x54()
Jan 1 00:00:07 FIE8180 user.debug kernel: Calling initcall 0xc0015728: init_aout_binfmt+0x0/0x1c()
Jan 1 00:00:07 FIE8180 user.debug kernel: Calling initcall 0xc0015744: init_script_binfmt+0x0/0x1c()
Jan 1 00:00:07 FIE8180 user.debug kernel: Calling initcall 0xc0015760: init_elf_binfmt+0x0/0x1c()
Jan 1 00:00:07 FIE8180 user.debug kernel: Calling initcall 0xc001ec8c: netlink_proto_init+0x0/0x214()
Jan 1 00:00:07 FIE8180 user.info kernel: NET: Registered protocol
Clear

Figure 4-34

4.8.6 System Log

The System Log records the events in the four types of logs: **System Event**, **Monitoring Event**, **I/O Event** and **Login/Logout Event**. With the System Log, you can search and obtain the detailed information of an event. To use the System Log, a memory card needs to be connected to the fisheye camera.

1. When accessing the System Log for the first time, you need to click **Create** to create a system log database (access file) on the memory card.

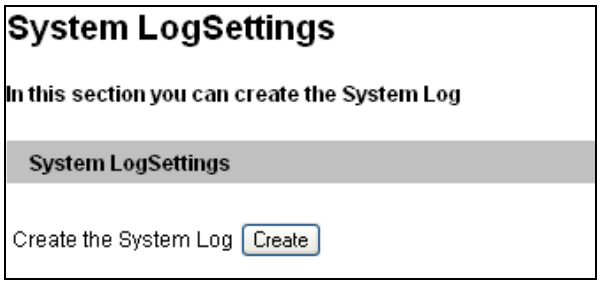


Figure 4-35

Note: If you have already created the System Log on the memory card, clicking **Create** again will clear your existing System Log.

---

2. Select the log type **System Event**, **Monitoring Event**, **I/O Event** or **Login/Logout** from the left menu of the Web interface.
3. Specify the filtering criteria. For example, we want to know the login and logout information during a specific period of time.
4. Click **Query**. The filtering results may look like the figure below.

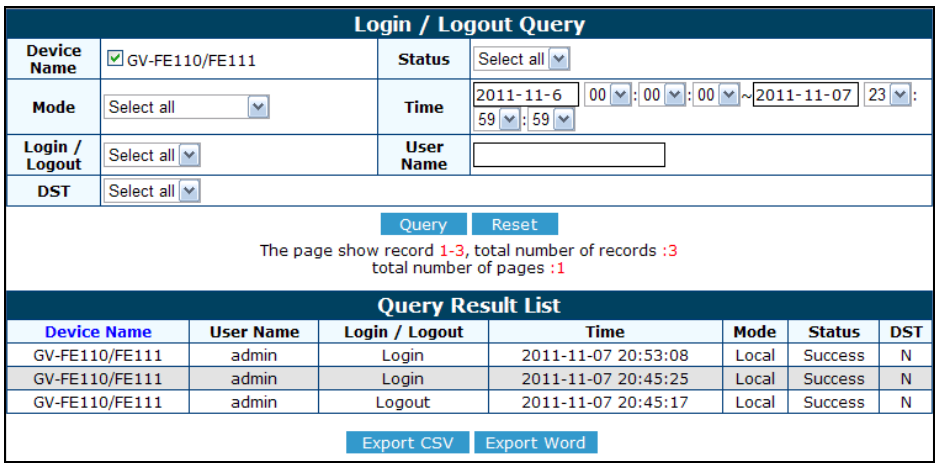

Login / Logout Query
Device Name
GV-FE110/FE111
Status
Select all
Mode
Select all
Time
2011-11-6 00 : 00 : 00 ~ 2011-11-07 23 : 59 : 59
Login / Logout
Select all
User Name
DST
Select all
Query
Reset
The page show record 1-3, total number of records :3
total number of pages :1
Query Result List
Device Name | User Name | Login / Logout | Time | Mode | Status | DST
GV-FE110/FE111 | admin | Login | 2011-11-07 20:53:08 | Local | Success | N
GV-FE110/FE111 | admin | Login | 2011-11-07 20:45:25 | Local | Success | N
GV-FE110/FE111 | admin | Logout | 2011-11-07 20:45:17 | Local | Success | N
Export CSV
Export Word

Figure 4-36

4.8.7 Tools

This section allows you to execute certain system operations and view the firmware version.

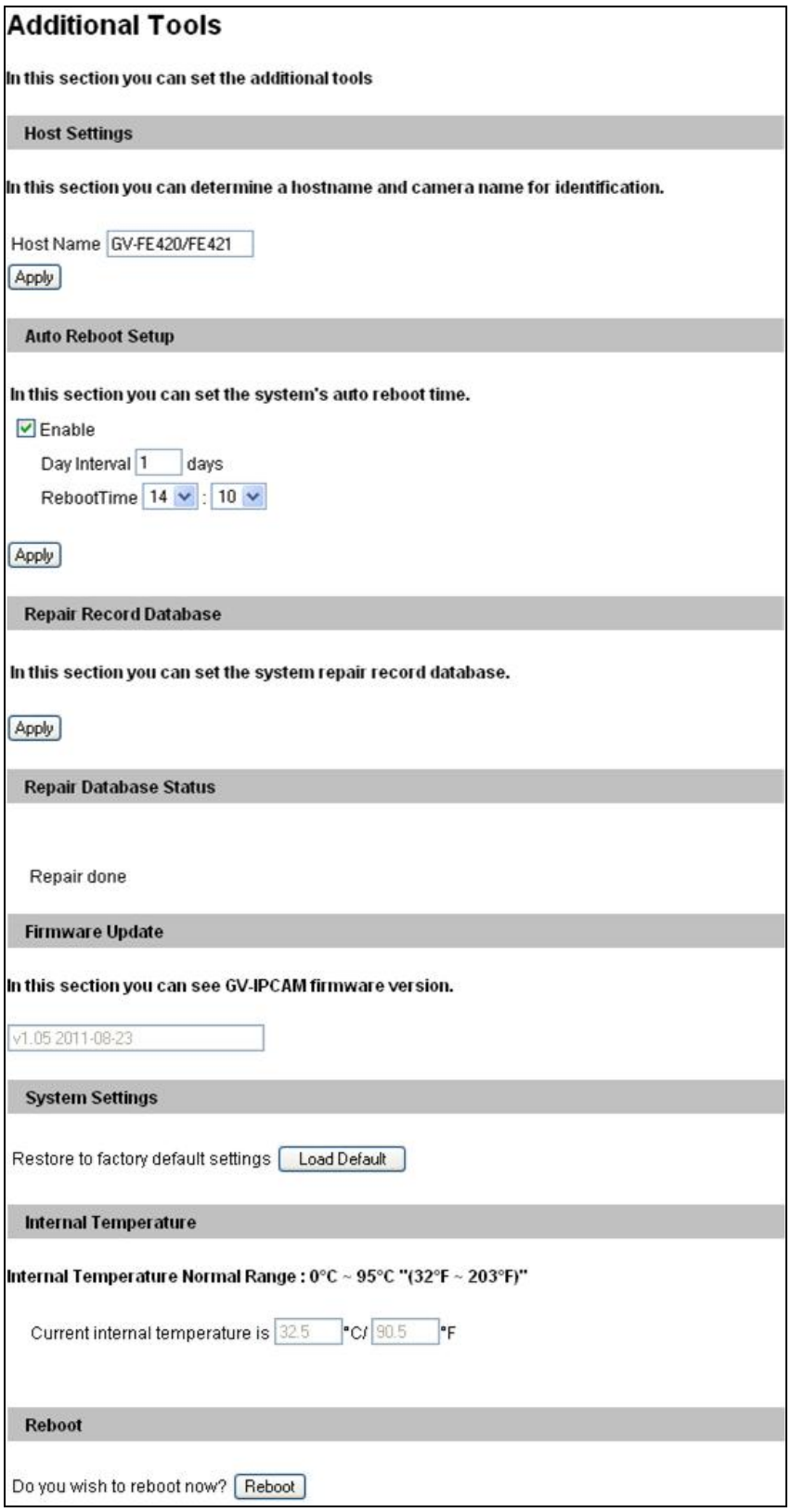

Additional Tools
In this section you can set the additional tools
Host Settings
In this section you can determine a hostname and camera name for identification.
Host Name GV-FE420/FE421
Apply
Auto Reboot Setup
In this section you can set the system's auto reboot time.
Enable
Day Interval 1 days
RebootTime 14 : 10
Apply
Repair Record Database
In this section you can set the system repair record database.
Apply
Repair Database Status
Repair done
Firmware Update
In this section you can see GV-IPCAM firmware version.
v1.05 2011-08-23
System Settings
Restore to factory default settings Load Default
Internal Temperature
Internal Temperature Normal Range : 0°C ~ 95°C "(32°F ~ 203°F)"
Current internal temperature is 32.5 °C/ 90.5 °F
Reboot
Do you wish to reboot now? Reboot

Figure 4-37

[Host Settings] Type a descriptive name for the camera.

[Auto Reboot Setup] Select **Enable** to activate automatic reboot and specify the time for reboot in the sub fields.

- **Day Interval:** Type the day interval between each automatic reboot.
- **Reboot Time:** Use the drop-down lists to specify the time for automatic reboot.

[Repair Record Database] Click **Apply** to repair the database when errors occur while playing back the recordings with Remote ViewLog player. Errors can occur when there are errors in firmware or damages to the SD card.

[Database Status] Displays the status of the repairing database.

[Firmware Update] This field displays the firmware version of the camera.

[System Settings] Clicking the **Load Default** button will restore the camera to factory default settings. You can also see the **Current chipset temperature inside the camera**.

Note: After applying the default function, you will need to configure the camera's network setting again.

[Temperature Status] Displays the chipset temperature inside the camera.

[Reboot] Clicking the **Reboot** button will make the camera perform software reset.

Chapter 5 Recording and Playback

The camera can record video and audio directly to the memory card. You can play back the recorded files on the GV-System or over the TCP/IP network.

Note: See ***Note for Recording*** at the beginning of the manual.

5.1 Recording

To enable the recording function:

1. Insert the memory card to the camera. See “To add a memory card,” *4.8.3 Storage Settings*.
2. If you like to set up pre-recording, post-recording or audio recording, see *4.1.1 Video Settings*.
3. If you like to set up the schedule for video recording or I/O monitoring, see *4.5 Recording Schedule*.
4. If you like to configure the areas and sensitivity values for motion detection, see *4.1.2 Motion Detection*.
5. If you want the recording to be triggered by input device, configure the operation of I/O devices. See *4.2.1 Input Settings*.
6. To start recording and I/O monitoring, see *4.4 Monitoring*.

The camera will start recording in case of motion detection, I/O trigger, or during the scheduled time.

5.2 Playback

These methods are available to play back the video files recorded at the camera:

- Playback using the memory card by connecting it directly to the GV-System through a memory card reader
- Playback using the Remote ViewLog function over the TCP/IP network
- Playback using the recorded files downloaded from built-in FTP Server

5.2.1 Playback Using the Memory Card

You can play back the files recorded at the camera by attaching the memory card to the GV-System. However, the GV-System is run on Windows system while the files recorded at camera is of Linux file system. To enable Windows to recognize the files, you need to install the program **Ext2 Installable File System** included on the Software DVD.

1. Insert the Software DVD, select **IFS Drives** and follow the onscreen instructions for installation.
2. Run **IFS Drives** from Control Panel and assign the drive name(s) to each available partition in the storage device.

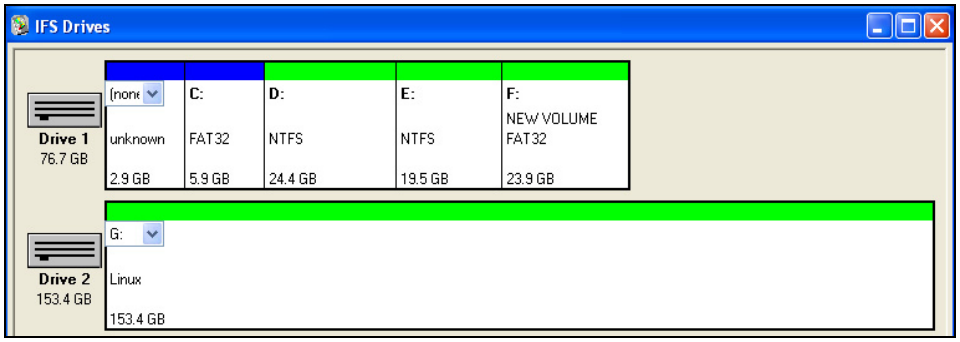


Figure 5-1

3. Run **ViewLog**.
4. Click the **Advanced** button , select **Reload Database** and click **Video Server/Compact DVR**. This dialog box appears.

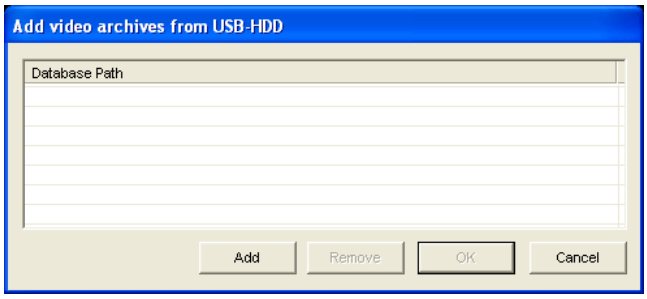


Figure 5-2

5. Click **Add** to assign the hard drive.
6. Click **OK** to load the data to the ViewLog for playback.

Note: IFS Driver supports Windows NT/2000/XP/Windows 7. For Windows 7, refer to ftp://geo-demo-japan.dipmap.com/Technotice/GV_IP_Devices/Run_IFS_Driver_Win7.pdf to see how to configure the settings.

5.2.2 Playback over Network

With the Remote ViewLog function, you can play back the files recorded at the camera over TCP/IP network.

1. The camera must allow remote access with **ViewLog Server** activated. See *4.3.7 ViewLog Server.*
2. For first time users, run the **Remote ViewLog** program from the Software DVD. Next time whenever you would like to use this function, access this option from the camera's Web interface.
3. When this dialog box appears, type the camera's IP address, login ID and password. Keep the default port **5552** or modify it if necessary.

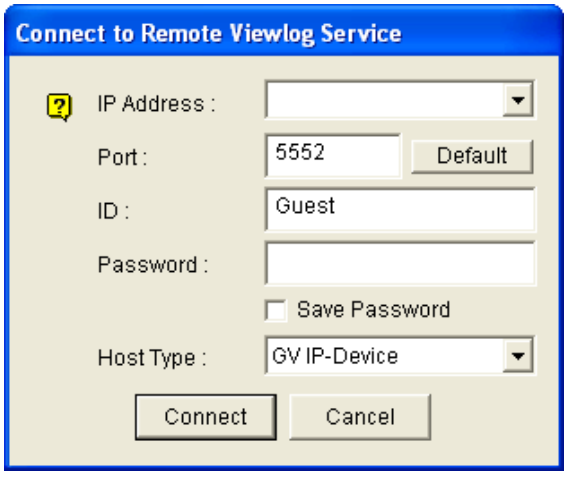


Figure 5-3

3. In the **Host Type** field, select **GV IP-Device**.
4. Click **Connect** to access the files of the camera for playback.

5.2.3 Access to the Recorded Files through FTP Server

The built-in FTP Server allows you to download the recorded files saved on the memory card. You can play back the downloaded files of AVI format with any multimedia player. For details to download files, see [Act as FTP Server], *4.3.2 FTP*.

Note: To play back videos, ensure you have installed Geovision codec on the computer. The codec is available on the software CD. If you have installed the Remote Playback player on the computer, it is not required to install the codec.

5.2.4 Playback of Daylight Saving Time Events

On GV-System, you can retrieve the events recorded during the Daylight Saving Time (DST) period from the camera for playback. You can also connect the memory card with the recorded files to GV-System for playback.

The following instructions describe how to retrieve the recorded files from the camera over Internet. If you like to use the memory card for playback, first follow the instructions in *5.2.1 Playback Using the Memory Card* to load the recorded files to ViewLog, and then follow Steps 4-5 below to play back DST events.

1. The camera must allow the remote access with **ViewLog Server** activated. See *4.3.7 ViewLog Server*.
2. To remotely connect to the camera from GV-System, click the **Tools** button and select **Remote ViewLog Service**. The Connect to Remote ViewLog Service dialog box appears.
3. Enter the connection information of the camera, and click **Connect**. Once the connection is established, the video events will be displayed on the Video Event list.
4. On the Date Tree, select the date of Daylight Saving Time. A separate DST subfolder will be displayed as illustrated below.

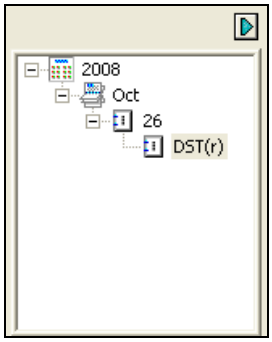


Figure 5-4

5. On the Video Event list, select desired events, and click the **Play** button to start.

Note:

1. The playback function is only compatible with GV-System version 8.4 or later.
2. The AVI file recorded during the DST period is named with the prefix “GvDST”, e.g. GvDST20081022xxxxxxxxx.avi, to differentiate from the regular AVI file named with the prefix “Event”, e.g. Event20081022xxxxxxxxx.avi.

Chapter 6 Advanced Applications

This chapter introduces more advanced applications.

6.1 Upgrading System Firmware

GeoVision periodically releases the updated firmware on the website. The new firmware can be simply loaded into the camera using the Web interface or the **IP Device Utility** included on the Software DVD.

Important Notes before You Start

Before you start updating the firmware, please read these important notes:

1. If you use the IP Device Utility for firmware upgrade, the computer used to upgrade firmware must be under the same network of the camera.
2. Stop monitoring of the camera.
3. Stop all the remote connections including Center V2, VSM, ViewLog Server and RTSP.
4. Stop the connection to GV-System.
5. While the firmware is being updated,
   A. the power supply must not be interrupted, and
   B. do not unplug the Ethernet cable if the cable is the source of power supply (Power over Ethernet or PoE supported).

WARNING: The interruption of power supply during updating causes not only update failures but also damages to your camera. In this case, please contact your sales representative and send your device back to GeoVision for repair.

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6. Do not turn the power off for 10 minutes after the firmware is updated.
7. If firmware upgrade fails, you will need to restore the camera to the default settings. For details, see *6.3 Restoring to Factory Default Settings* in the User's Manual.

6.1.1 Using the Web Interface

1. In the Live View window, click the **Show System Menu** button (No. 9, Figure 3-3) and select **Remote Config**. This dialog box appears.

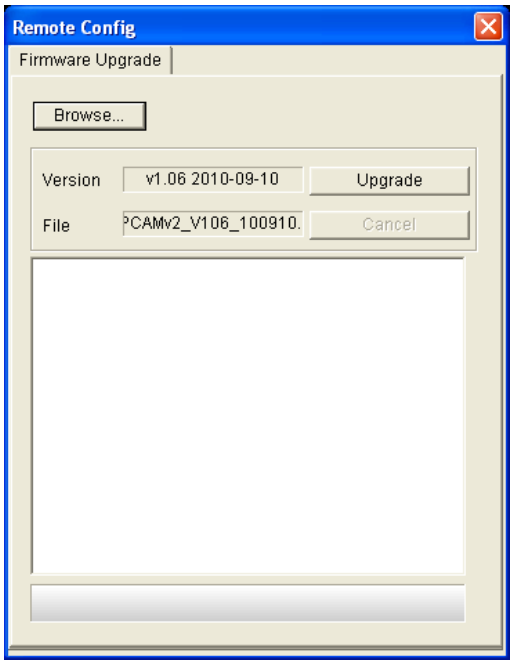


Figure 6-1

2. Click the **Browser** button to locate the firmware file (.img) saved at your local computer.
3. Click the **Upgrade** button to process the upgrade.

6.1.2 Using the IP Device Utility

The IP Device Utility provides a direct way to upgrade the firmware for multiple cameras Note the computer used to upgrade firmware must be under the same network of the camera.

1. Insert the Software DVD, select **IP Device Utility**, and follow the onscreen instructions to install the program.
2. Double-click the **GV IP Device Utility** icon created on your desktop. This dialog box appears.

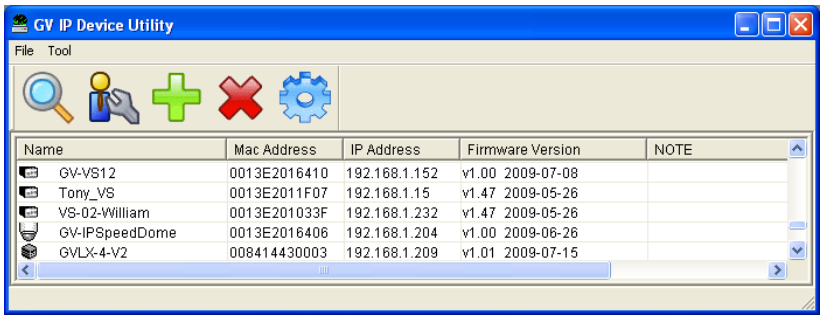


Figure 6-2

3. Click the **Search** button to locate the available cameras on the same LAN. Or click the **New** button and assign the IP address to locate the camera over the Internet. Or highlight a camera in the list and click the **Delete** button to remove it.
4. Double-click a camera in the list. This dialog box appears.

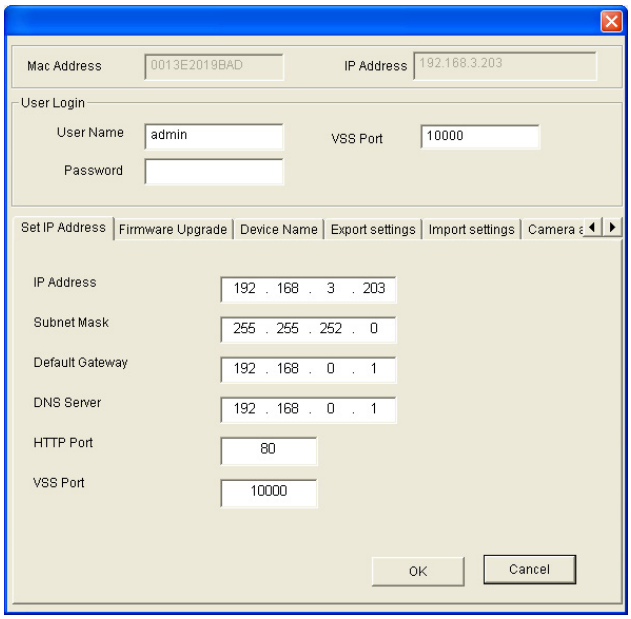


Figure 6-3

5. Click the **Firmware Upgrade** tab. This dialog box appears.

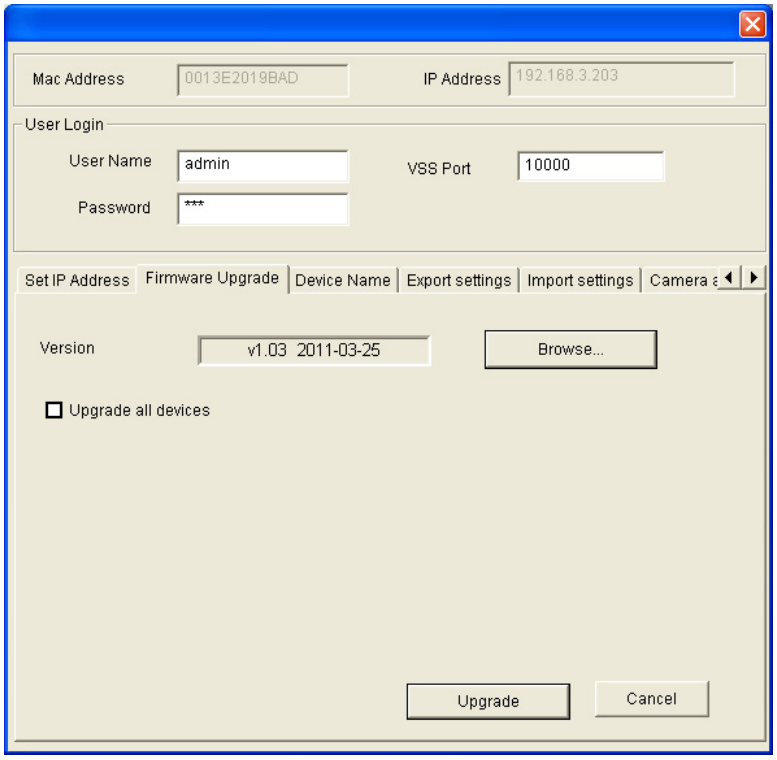


Figure 6-4

6. Click the **Browse** button to locate the firmware file (.img) saved at your local computer.
7. If you like to upgrade all cameras of the same model in the list, check **Upgrade all devices**.
8. Type **Password**, and click **Upgrade** to process the upgrade.

6.2 Backing Up and Restoring Settings

With the IP Device Utility included on the Software DVD, you can back up the configurations in the camera, and restore the backup data to the current unit or import it to another unit.

6.2.1 Backing Up the Settings

1. Run **IP Device Utility** and locate the desired camera. See Steps 1-3 in *6.1.2 Using the IP Device Utility.*
2. Double-click the camera in the list. Figure 6-3 appears.
3. Click the **Export Settings** button. This dialog box appears.

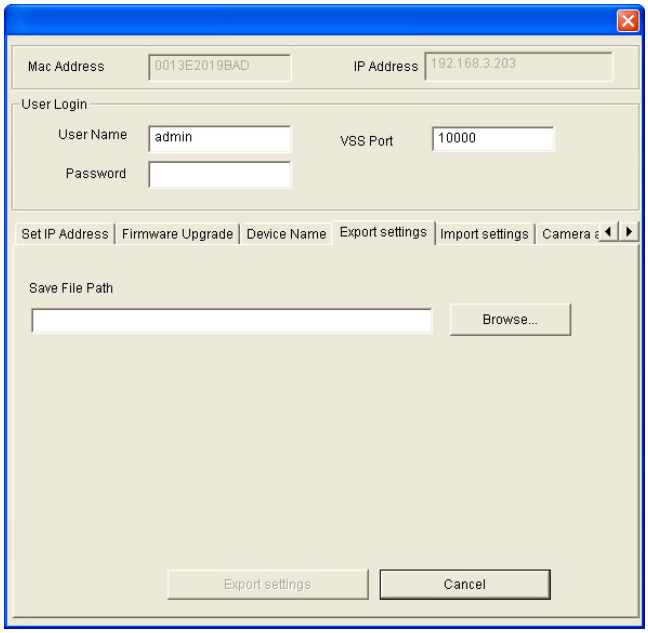


Figure 6-5

4. Click the **Browse** button to assign a file path.
5. Type **Password**, and click **Export Settings** to save the backup file.

6.2.2 Restoring the Settings

1. In Figure 6-3, click the **Import Settings** tab. This dialog box appears.

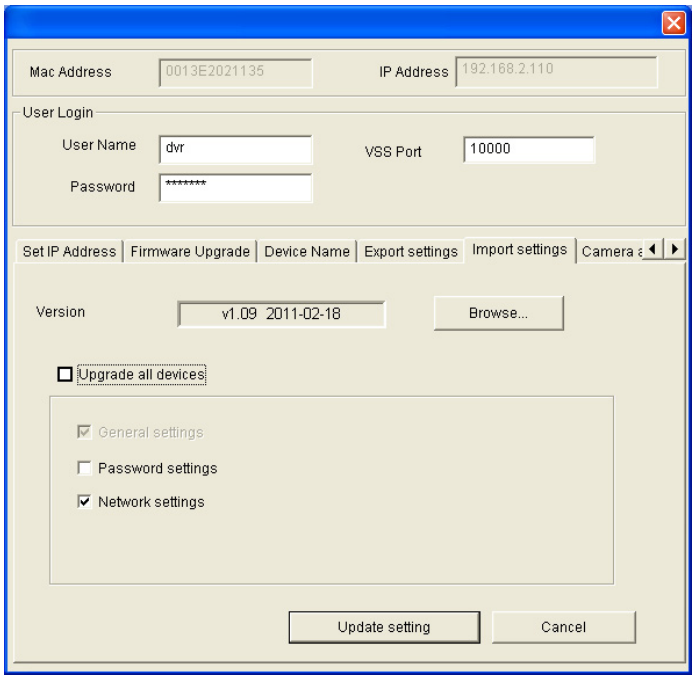


Figure 6-6

2. Click the **Browse** button to locate the backup file (.dat).
3. Select **Upgrade all devices** to apply the settings to all devices of the same model in the same LAN. To import password settings and/or network settings, select **Password Settings** and/or **Network settings**.
4. Click the **Update Settings** button to start restoring.

6.3 Restoring to Factory Default Settings

You can restore the camera to factory default settings using the Web interface or directly on the camera.

To restore to default settings using the Web interface:

1. In the left menu, select **Management** and select **Tools**.
2. Under the **System Settings** section, click the **Load Default** button.

To restore to default settings directly on the camera:

1. Unplug the power cable and the network cable.
2. To access the **Load default** button, first remove the outer shell of the camera. Refer to *1.5 Physical Description* for details.
3. Use a pointy object such as the tip of a pen to hold down the **Load default** button (No. 4, Figure 1-2) while plugging the power cable and the network cable.
4. Wait until the network status LED turns off momentarily to release the **Load default** button. This may take about 40 seconds.
5. The system status LED should turn back on.

6.4 Verifying Watermark

The watermark is an encrypted and digital signature embedded in the video stream during the compression stage, protecting the video from the moment of its creation. Watermarking ensures that an image is not edited or damaged after it is recorded. To enable the watermark function, see [Watermark], *4.1.1 Video Settings.*

The **Watermark Proof** is a watermark-checking program. It can verify the authenticity of the recording before you present it in court.

6.4.1 Accessing AVI Files

To verify watermark, first you have to access the recorded AVI files by one of these methods:

1. Use the **File Save** function on the Live View window (Figure 3-3) to start recording on the local computer.
2. Use the **Act as FTP Server** function to download AVI files from the camera. See *4.3.2 FTP.*
3. Use the files recorded on the memory card. Since the files saved on the memory card are of Linux file system, remember to run **IFS Drives** from the Software DVD to convert the Linux-based files to Windows-based files. For the instructions, see Steps 1 to 2 in *5.2.1 Playback Using the Memory Card.*

6.4.2 Running Watermark Proof

1. Install **Watermark Proof** from the Software DVD. After installation, a **WMProof** icon is created on your desktop.
2. Double-click the created icon. The Water Mark Proof window appears.
3. Click **File** from the menu bar, select **Open** and locate the recording (.avi). The selected recording is then listed on the window. Alternatively, you can drag the recording directly from the storage folder to the window.
4. If the recording is unmodified, a check will appear in the **Pass** column. On the contrary, if the recording is modified or does not contain watermark during recording, a check mark will appear in the **Failed** column. To review the recording, double-click the listed file on the window.

6.4.3 The Watermark Proof Window

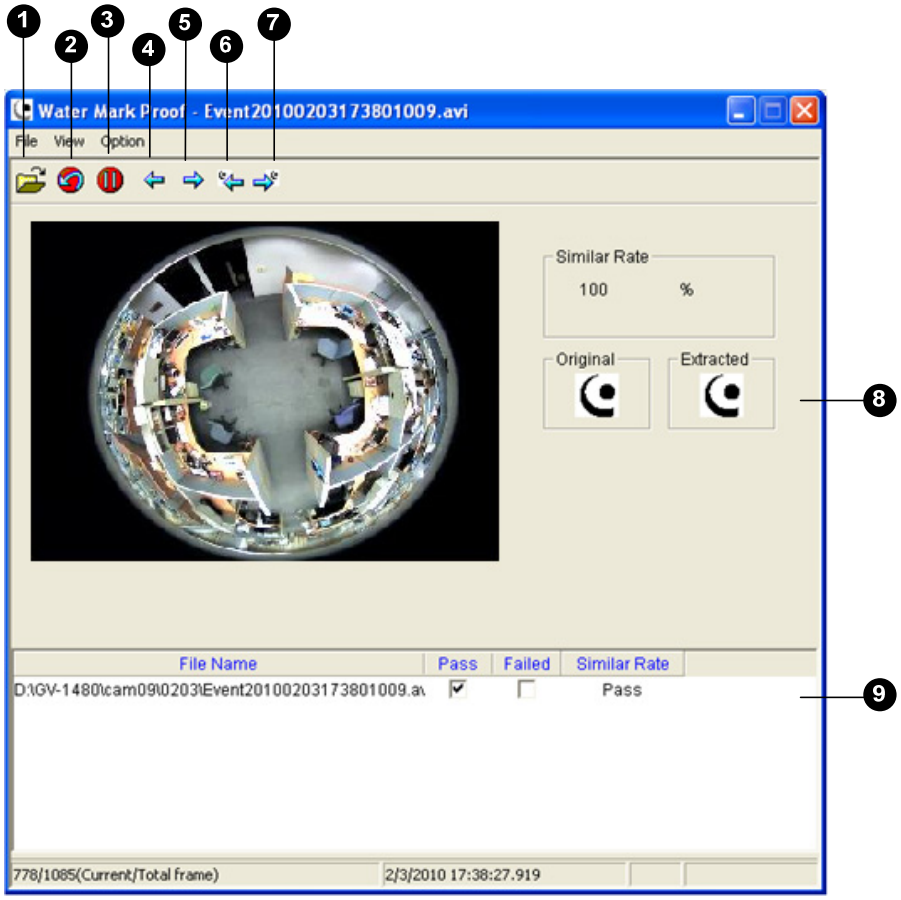


Figure 6-7

The controls in the window:

No.	Name	Description
1	Open File	Opens the recorded file.
2	First Frame	Goes to the first frame of the file.
3	Play	Plays the file.
4	Previous Frame	Goes to the previous frame of the file.
5	Next Frame	Goes to the next frame of the file.
6	Previous Watermarked Frame	Goes to the previous frame that contains watermark.
7	Next Watermarked Frame	Goes to the next frame that contains watermark.
8	Original vs. Extracted	The Extracted icon should be identical to the Original icon. If not, it indicates the recording has been tampered with.
9	File List	Displays the proof results.

Chapter 7 DVR Configurations

The GV-System provides hybrid solution, integrating the digital videos from IP cameras with other analog videos. For digital videos, the GV-System provides complete video management, such as video viewing, recording, playback, alert settings and almost every feature of the system. The integration specifications are listed below:

- The compatible GV-System version for each GV-Fisheye model:

Camera Model	Compatible GV-System Version
GV-FE110	V8.4 (with patch files) or later
GV-FE420	V8.4 (with patch files) or later
GV-FE520	V8.5 or later

- The maximum number of streams supported by the fisheye camera is 7 for GV-FE110/FE520 and 5 for GV-FE420. When a fisheye camera is connected to IE browser or any other applications, it takes up 1 stream. When a fisheye camera is connected to GV-System, it takes up 1 stream.

	GV-FE110	GV-FE420	GV-FE520
Maximum number of streams	7	5	7
Connection from one GV-System	Takes up 1 stream		
One connection to Web interface	Takes up 1 stream		
Connection from one Center V2	Takes up 1 stream		

Note: The above maximum numbers of streams are based on the maximum resolution for the camera and the codec H.264.

- The hardware compression and the “Pre-Recording Using RAM” feature cannot work on the videos from the fisheye camera.

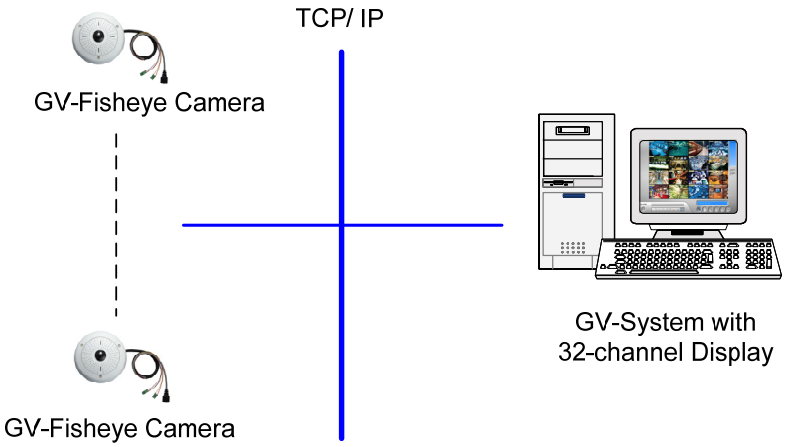


Figure 7-1

7.1 Setting Up IP Cameras

To set up the camera on the GV-System, follow these steps:

1. On the main screen, click the **Configure** button, select **System Configure**, select **Camera Install** and click **IP Camera Install**. This dialog box appears.

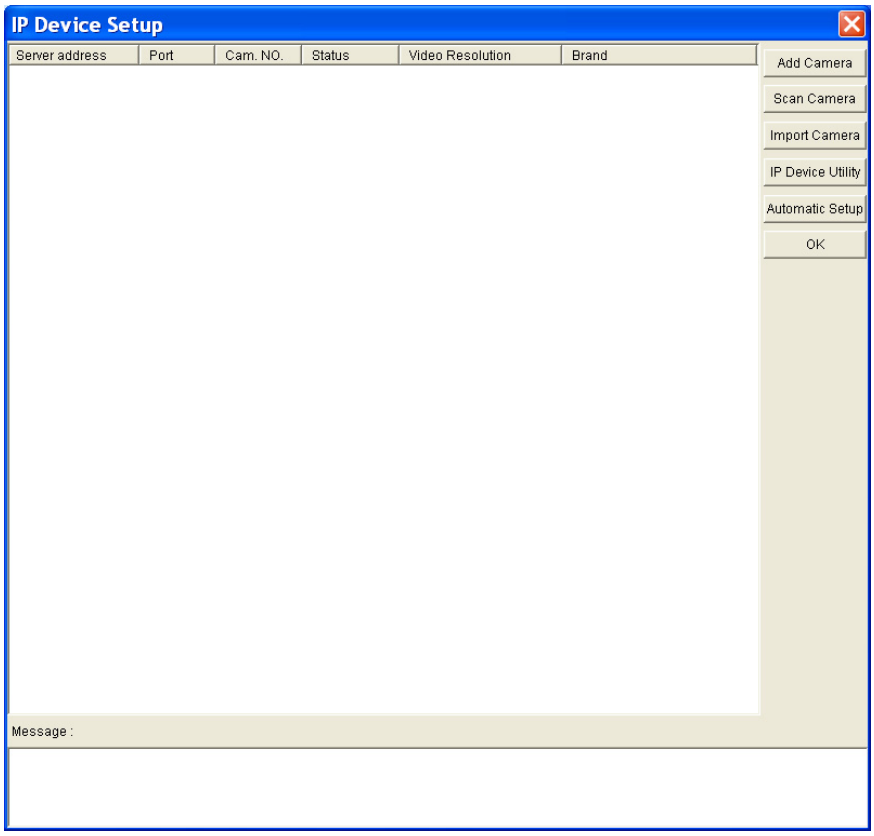


Figure 7-2

- To automatically set up the camera, click **Scan Camera** to detect any GV IP devices on the LAN.
- To manually set up the camera, click **Add Camera**.

The following steps are the example of manual setup.

2. Click **Add Camera**. This dialog box appears.

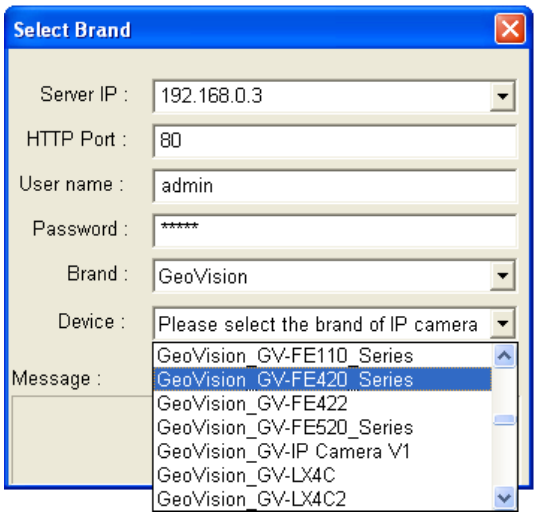


Figure 7-3

3. Type the IP address, username and password of the camera. Modify the default HTTP port if necessary. Select **GeoVision** from the **Brand** drop-down list and select the model from the **Device** drop-down list. This dialog box appears.

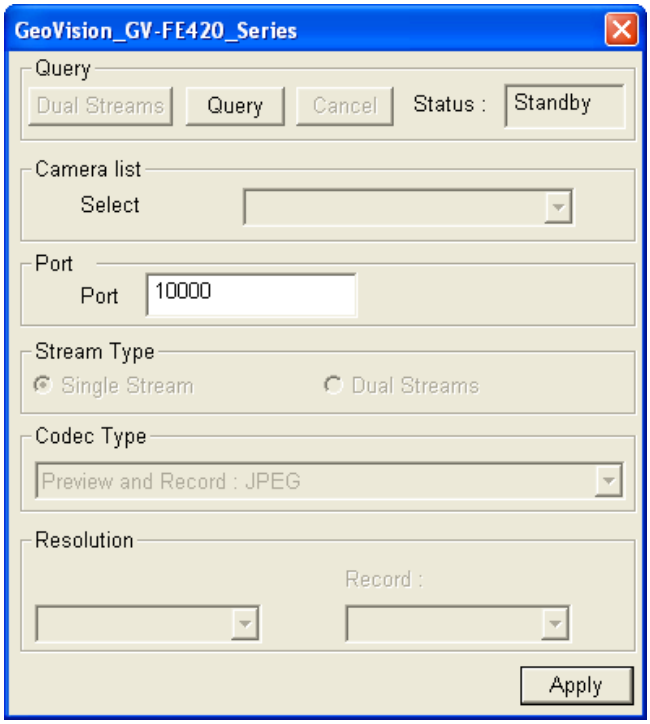


Figure 7-4

4. Click **Query** to acquire the information from the IP camera. You can change the video streaming port number if needed.

5. Click **Apply**. The IP camera is added to the connection list.

6. Click the listed camera and select **Display position** to map the IP camera to a channel on the GV-System.

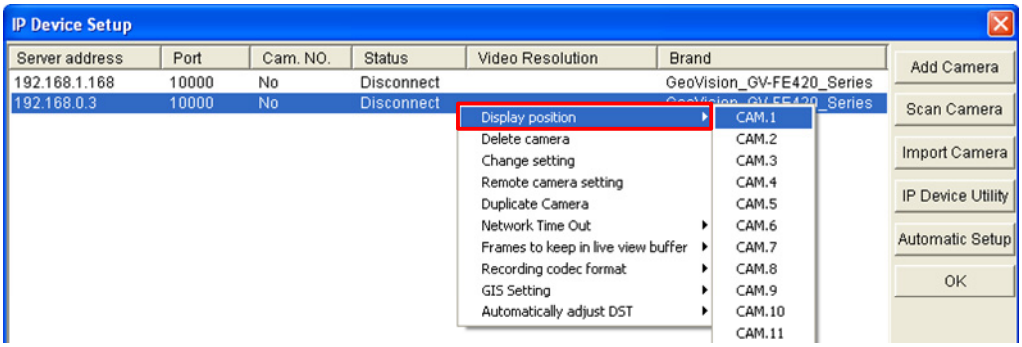


Figure 7-5

7. The Statue column should display “Connected”. Click **OK.**

7.1.1 Customizing the Basic Settings

After the GV-Fisheye Camera is connected and assigned with a display position, you can configure the camera's settings such as frame rate, codec type and resolution. Right-click the desired camera to see the following list of options:

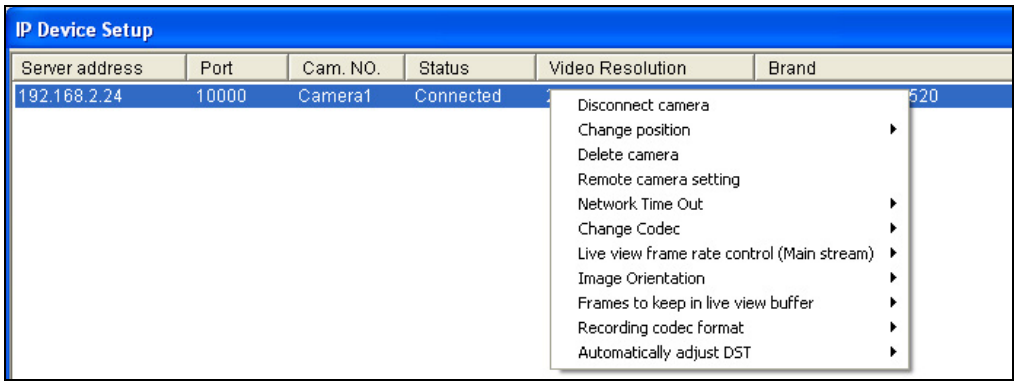


Figure 7-6

- **Network Time Out:** When network disconnection exceeds the specified time period, the camera status will be displayed as Connection Lost.
- **Change Codec:** Changes the code type.
- **Live-view frame rate control (Main stream):** Sets the live view frame rate of the sub stream to help reduce the CPU usage. If you have set the live view codec to be MJPEG, select the number of frames to allow in a second. If the live view codec selected is MPEG4 or H.264, select one of the following options:
  - **Maximum Live-view Frame Rate:** View the video at the maximum frame rate possible.
  - **Live-view Key Frame only:** You can choose to view the key frames of the videos only instead of all frames on the live view. This option is related to the GOP setting of the IP camera. For example, if the GOP value is set to 30, there is only one key frame among 30 frames.
- **Image Orientation:** You can adjust the image orientation by selecting **Normal**, **Horizontal Mirror**, **Vertical Flip** or **Rotate 180°**.
- **Frames to keep in live view buffer:** Specifies the number of frames to keep in the live view buffer.
- **Recording Codec Format:** Specifies whether to record in standard or GeoVision type of MJPEG, MPEG4, H.264 codec.
- **Automatically Adjust DST:** If enabled, the time on the GV-IP device Web interface will be synchronized with the time of the GV-System when DST period starts or ends on the GV-System.

7.2 Remote Monitoring with Multi View

You can use the Multi View to monitor and manage the camera.

7.2.1 Connecting to the IP Camera

1. On the Multi View window, click the **Edit Host** button. The Edit Host window appears.
2. To create a host, click the **New** button. You need to create a group before creating a host.
3. Select **GV-IP Camera**, **GV-IP Speed Dome** from the Device drop-down list. Type the host name, IP address, user name and password of the camera. Modify the default VSS port **10000** if necessary.

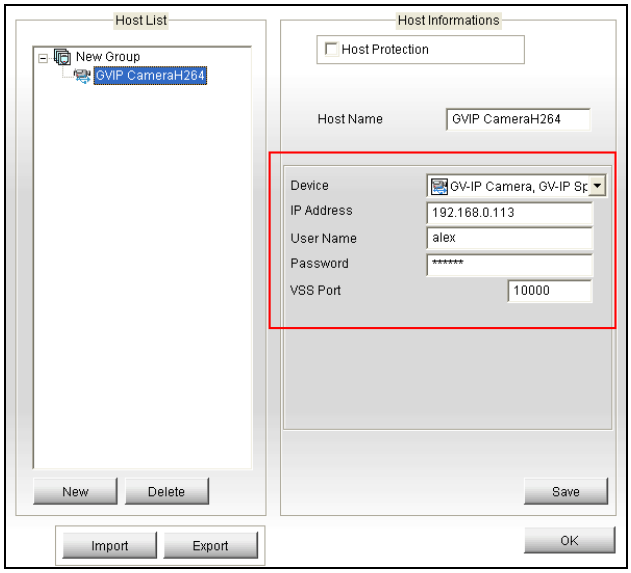


Figure 7-7

4. Click **Save** to establish connection.

For details on the Multi View functions, see “Multi View Viewer”, *Remote Viewing, DVR User’s Manual* on the Surveillance System Software DVD.

7.3 Remote Monitoring with E-Map

You can use the Remote E-Map to monitor and manage the camera.

7.3.1 Creating an E-Map for the IP Camera

With the E-Map Editor, you can create an E-Map for the camera. The E-Map Editor is available in the two applications: Main System and E-Map Server. The following is an example of running the E-Map Editor included in the Main System.

1. Go to Windows **Start** menu, point to **Programs**, select **GV folder** and click **E-Map Editor**.
2. To create an E-Map, click the **Add Map** button on the toolbar. A New Map file appears.
3. Double-click the New Map file, and click the **Load Map** button on the toolbar to import a graphic file.
3. To create a host, click the **Add Host** button on the toolbar and select **Add Camera**.
4. Right-click the created New Host in the Host View, and select **Host Settings**. This dialog box appears.

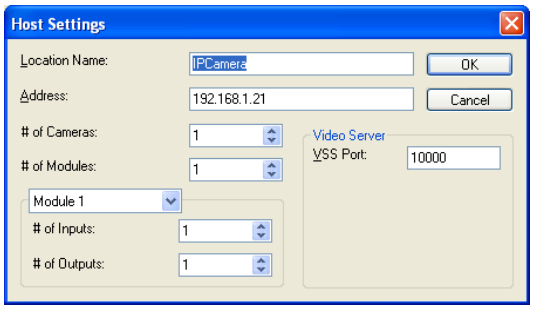


Figure 7-8

4. Give the camera a location name, and type its IP address (or domain name). Modify the default VSS port **10000** if necessary.
5. Click **OK** to save the settings.
6. Expand the created host folder. Drag and drop the icons of cameras and I/O devices onto the imported E-Map.
7. Close the E-Map Editor. Click **Yes** when you are promoted to save the file.

For details on creating an E-Map file on the E-Map Server, see “E-Map Server”, *E-Map Application*, *DVR User’s Manual* on the Surveillance System Software DVD.

7.3.2 Connecting to the IP Camera

Depending on where you save the created E-Map file (DVR, E-Map Server or Control Center), the steps to open the Remote E-Map window for monitoring may vary slightly. The following is the connection example when you store the E-Map file on the DVR.

1. To enable the remote access to the DVR, click the **Network** button, select **WebCam Server** to display the Server Setup dialog box, and click **OK** to start the WebCam server.
2. At the local computer, open the web browser and type the address of the DVR. The Single View page appears.
3. Select **Emap**. A valid user name and password are required for login. For the first-time user, you will be directed to the Download page. Install the E-Map program before you can run it.
4. On the Remote E-Map window, click the **Login** button and select the camera host to access its videos and I/O devices. A valid user name and password are required to log in the camera.

For details on the Remote E-Map functions, see “The Remote E-Map Window”, *E-Map Application, DVR User’s Manual* on the Surveillance System Software DVD.

Chapter 8 CMS Configurations

This section introduces settings on connecting the camera in the central monitoring stations Center V2, VSM and Dispatch Server.

8.1 Center V2

The Center V2 can monitor and manage the camera and I/O devices connected to the camera.

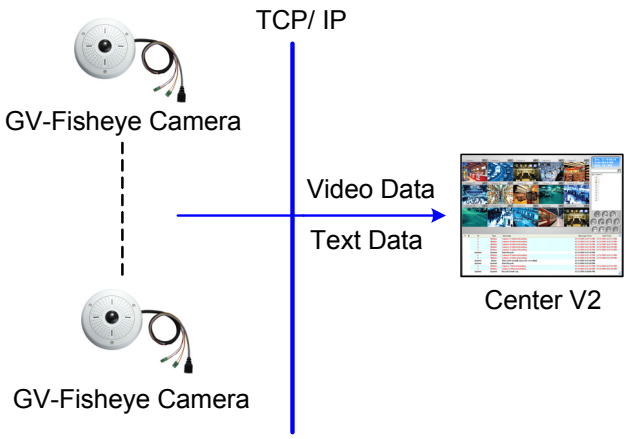


Figure 8-1

- To set the appropriate port connecting to the IP camera, click the **Preference Settings** button, select **System Configure**, click the **Network** tab, and check **Accept connections from GV-Compact DVR, Video Server & IP Cam**. Keep the default port 5551 for the Port 2 option, or modify it to match the Center V2 port on the camera.

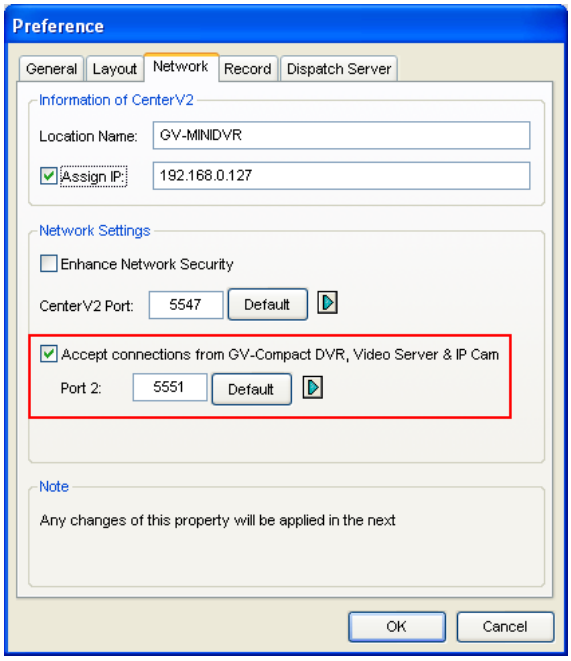


Figure 8-2

- To define how to display the received video on motion detection and input trigger from the camera, click the **Preference Setting** button and select **System Configure**. This dialog box appears.

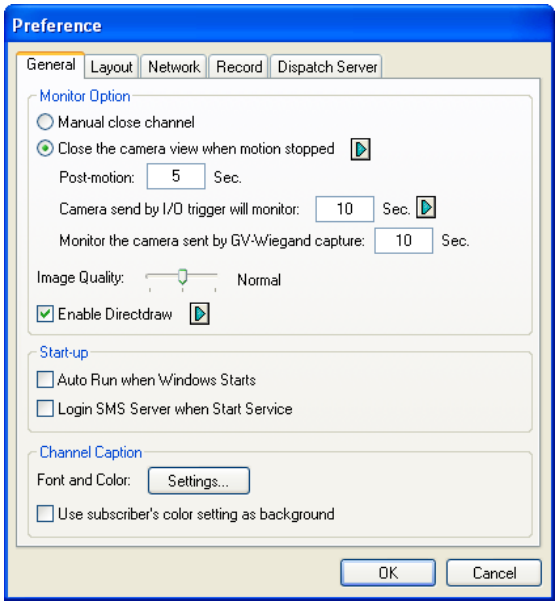


Figure 8-3

- **Manual close channel:** Closes the triggered camera view manually.
- **Close the camera view when motion stopped:** Closes the triggered camera view automatically when motion stops.
- **Post Motion:** Specify the duration of the camera view remaining on the monitoring window after motion stops.
- **Camera send by I/O trigger will monitor:** Specify the duration of the camera view remaining on the monitoring window when an I/O device is triggered.

To keep the camera view remaining on the monitoring window even after the alarm is finished, click the right-arrow button, and uncheck **Latch Trigger**. Then the camera view will keep remaining on the monitoring window for the specified time. For example, the alarm is triggered for 5 minutes and you set 10 minutes, which means the total display time will be 15 minutes.

For further information on how to manage the video received from the camera, see *GV-CMS Series User's manual.*

8.2 VSM

The VSM can monitor and manage the camera and I/O devices connected to the camera.

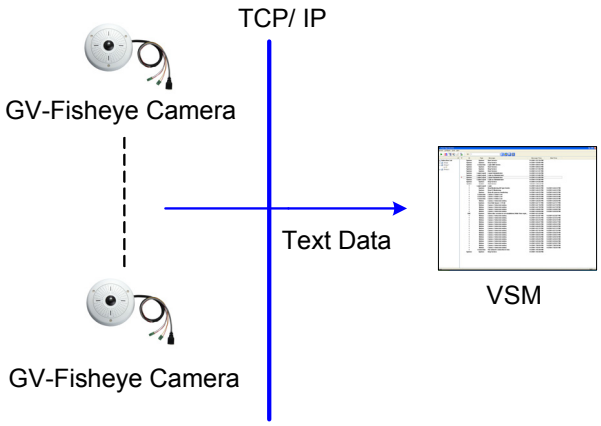


Figure 8-4

To set the appropriate port connecting to the camera, click **Configure** on the window menu, and select **System Configure** to display this dialog box. In the **Connective Port** field, keep the default value **5609** for the Port 2 option, or modify it to match the VSM port on the camera.

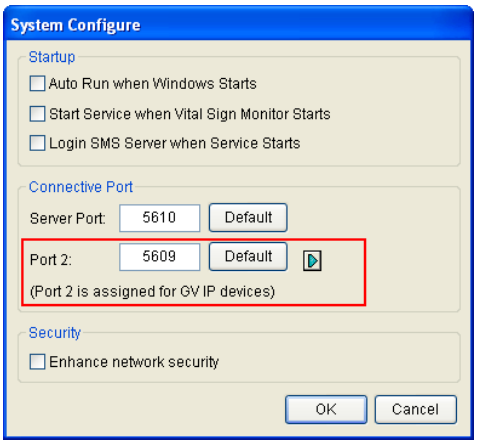


Figure 8-5

For further information on how to manage the video received from the camera, see *GV-CMS Series User's manual*.

8.3 Dispatch Server

The Dispatch Server can manage the camera and I/O devices connected to the camera, and distribute them to the Center V2.

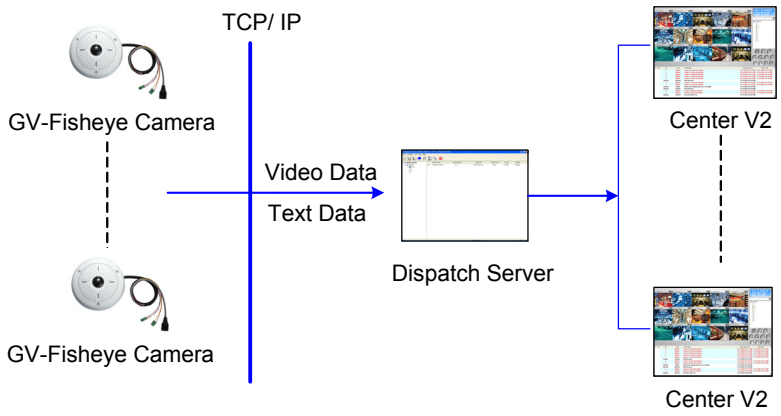


Figure 8-6

To enable connecting to the camera, click the **Setting** button on the toolbar, and select **Allow GV IP devices to login as subscriber from port**. Keep the default port **5551**, or modify it to match the Center V2 port on the camera.

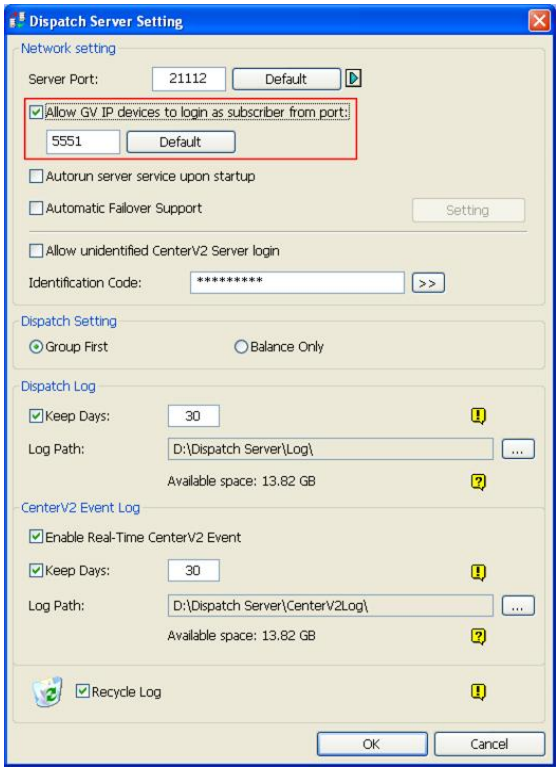


Figure 8-7

For further information on how to manage the video received from the camera, see *GV-CMS Series User's manual.*

Specifications

Camera

Image Sensor	**GV-FE110**	1/3" progressive scan CMOS	
	GV-FE420 **GV-FE520**	1/2.5" progressive scan CMOS	
Picture Elements	**GV-FE110**	1280 (H) x 1024 (V)	
	GV-FE420	2048 (H) x 1944 (V)	
	GV-FE520	2560 (H) x 1920 (V)	
Minimum Illumination	**GV-FE110**	Color	1.5 Lux (1/60 sec), 0.1 Lux (1/5 sec), (30 IRE, F/2.0, AGC-ON, slow shutter-Off.)
	GV-FE420	Color	4 Lux (1/30 sec), 2 Lux (1/5 sec)
		B/W	
	GV-FE520	Color	2.0 Lux / F2.0
		B/W	
Shutter Speed	**GV-FE110**	Automatic (Balanced, Speed Priority, Quality Priority), (1/5 ~ 1/4000 sec)	
	GV-FE420 **GV-FE520**	Automatic, Manual (1/5 ~ 1/8000 sec)	
White Balance		Automatic, Manual (2800K ~ 8500K)	
Note: Although the GV-FE420/FE520 supports day/night function, they are not equipped with an IR-cut filter and therefore cannot work with infrared illuminators.			

Optics Lens

Megapixel		Yes
Electronic Day / Night function	**GV-FE110**	No
	GV-FE420 **GV-FE520**	Yes
Lens Type		Fixed
Iris		Fixed Iris

Focal Length		**GV-FE110**	1.25 mm
		GV-FE420	1.05 mm
		GV-FE520	1.6 mm
Maximum Aperture		**GV-FE110** **GV-FE520**	F/2.0
		GV-FE420	F/2.8
Mount			M12, Pitch 0.5 mm
Image Format		**GV-FE110**	1/3”
		GV-FE420	1/2"
		GV-FE520	4.7 mm (image circle)
Angle of View	**Diagonal** **Horizontal** **Vertical**	**GV-FE110** **GV-FE520**	185°
		GV-FE420	180°
Operation		**Focus**	None
		Zoom	None
		Iris	Fixed

Operation

Video Compression	**GV-FE110**	H.264, MPEG4, MJPEG
	GV-FE420 **GV-FE520**	H.264, MJPEG
Video Streaming	**GV-FE110**	Single streaming from H.264, MPEG4 or MJPEG
	GV-FE420 **GV-FE520**	Single streaming from H.264 or MJPEG
Video Resolution	**GV-FE110**	1280 x 1024
	GV-FE420	2048 x 1944
	GV-FE520	2560 x 1920 2048 x 1944
Frame Rate	**GV-FE110**	15 fps at 1280 x 1024
	GV-FE420	15 fps at 2048 x 1944

	GV-FE520	10 fps at 2560 x 1920 15 fps at 2048 x 1944
Image Setting		Brightness, Contrast, Sharpness, Saturation, Gamma, White Balance, Flicker-less, Backlight Compensation, Image Orientation, Shutter Speed, Day / Night
Audio Compression		G.711, AAC (16 kHz / 16 bit)
Sensor Input		1 digital input (Dry Contact)
Alarm Output		1 digital output (200 mA 5V DC)

Note:

1. Backlight compensation is not available in GV-FE110.
2. Day / Night function is only available in GV-FE420 (V1.03 or later) and GV-FE520.
3. AAC (16 kHz / 16 bit) audio codec is only supported in GV-FE420/FE520 with GV-System V8.5 or later.

Network

Interface	10/100 Ethernet
Protocol	HTTP, HTTPS, TCP, UDP, SMTP, FTP, DHCP, NTP, UPnP, DynDNS, RTSP, PSIA, SNMP, QoS (DSCP)

Mechanical

Lens Mounting		M12, Pitch 0.5 mm / 0.02 in
Temperature Detector		Yes
Connectors	**Power**	Terminal block (3 pin), PoE
	Ethernet	Ethernet (10/100 Base-T), RJ-45 Connector
	Audio	Built-in microphone and speaker
	Digital I/O	I/O Wire
	Auto Iris	None
	Local Storage	Micro SD/SDHC memory card slot (for Class 6 card or above)
	TV-Out	None

General

Operating Temperature		0°C ~ 50°C / 32 °F ~ 122 °F	
Humidity		10% to 90% (no condensation)	
Power Source		12V DC / 24V AC / PoE (IEEE802.3af)	
Maximum Power Consumption	**GV-FE110**	9 W	
	GV-FE420 **GV-FE520**	5 W	
Regulatory		CE, FCC, C-Tick, RoHS compliant	
Dimension	**Camera Body**	**Hard-Ceiling Mount**	Ø 160 x 50.55 mm / 6.30 x 1.99 in
		In-Ceiling Mount	Ø 164 x 50.55 mm / 6.46 x 1.99 in
	Cable Length	1 m / 3.28 ft	
	Cable Diameter	Ø 8 mm / 0.31 in	
	Max. Connector Diameter	Ø 28.5 mm / 1.12 in	
Weight		650 g / 1.43 lb	

Power over Ethernet

PoE Standard	IEEE 802.3af Power over Ethernet / PSE
PoE Power Supply Type	End-Span
PoE Power Output	Per Port 48V DC, 350mA. Max. 15.4 watts

Web Interface

Installation Management	Web-based configuration
Maintenance	Firmware upgrade through Web Browser or Utility
Access from Web Browser	Camera live view, video recording, change video quality, bandwidth control, image snapshot, digital I/O control, audio, picture in picture, picture and picture, motion detection, privacy mask, visual automation, tampering alarm, auto pan function, virtual PTZ, wide angle lens dewarping, text overlay
Language	Bulgarian / Czech / Danish / Dutch / English / French / German / / Greek / Hebrew / Hungarian / Italian / Indonesian / Japanese / Norwegian / Lithuanian / Persian / Polish / Portuguese / Romanian / Russian / Serbian / Simplified Chinese / Slovakian / Slovenian / Spanish / Thai / Traditional Chinese / Turkish

Application

Network Storage	GV-NVR, GV-System, GV-Backup Center, GV-Recording Server
Live Viewing	IE, GV-Multi View
CMS Server Support	GV-Control Center, GV-Center V2, GV-VSM

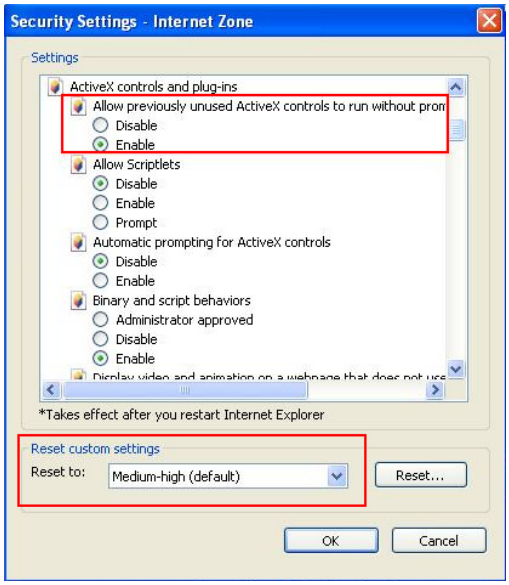
All specifications are subject to change without notice.

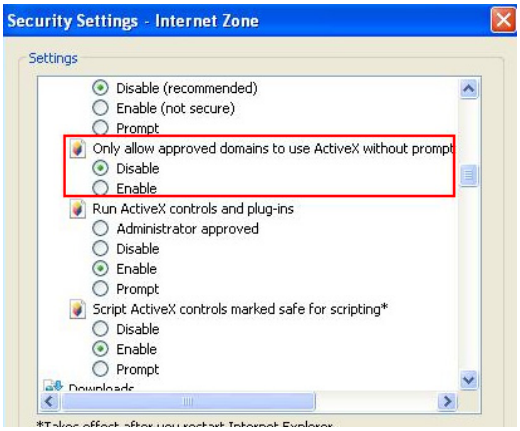
Appendix

A. Settings for Internet Explore 8

If you use Internet Explorer 8, it is required to complete the following setting.

1. Set the Security to **Medium-high (default)**.
2. Enable **Allow previously unused ActiveX controls to run without prompt**.
3. Disable **Only allow approved domains to use ActiveX without prompt**.





B. RTSP Protocol Support

The fisheye camera can support RTSP protocol for both video and audio streaming.

If you are using Quick Time player, use the following RTSP command:

rtsp://<IP of the fisheye camera>:8554/<CH No.>.sdp

For example, rtsp://192.168.3.111:8554/CH001.sdp

If you are using VLC player, use the following RTSP command:

rtsp://<ID>:<Password>@<IP of the camera>:8554/<CH No.>.sdp

For example, rtsp://admin:admin@192.168.3.111:8554/CH001.sdp

Note:

1. RTSP streaming is supported over HTTP, UDP and TCP.
2. The video streaming through RTSP protocol can only be displayed in circular source images.
3. The RTSP protocol must be enabled on the Web interface. See *4.3.8 RTSP*.
4. Only VLC and QuickTime players are supported for streaming video via RTSP protocol.

C. The CGI Command

You can use the CGI command to obtain a snapshot of the live view without logging in the Web interface or to access the User Account Web interface. For a fisheye camera with the following details:

IP address: 192.168.2.11

Username: admin

Password: admin

Desired stream: 1

Type the following into your web browser to **obtain a snapshot**:

http://192.168.2.11/PictureCatch.cgi?username=admin&password=admin&channel=1

Type the following into your web browser to **access the User Account Web interface**:

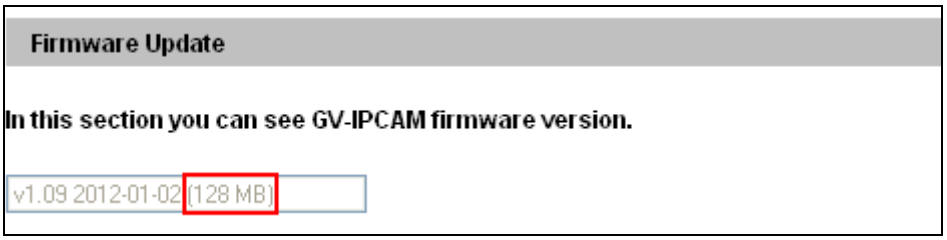
http://192.168.2.11/ConfigPage.cgi?username=admin&password=admin&page=UserSetting

D. Supported Firmware for Flash Memory

The 128 MB flash memory is supported in firmware V1.09 or later except GV-FE110.

To look up if the camera contains a 128 MB type flash memory, access the web interface or the GV IP Device Utility:

- **Web Interface**
  Click **Management** and click **Tools**. The "128 MB" should be noted after the firmware version.



- **GV IP Device Utility**
  The "128 M" should appear under the NOTE column.